

TransAlta Utilities Corporation

AIR QUALITY MONITORING **June 2017** **Monthly Report**

Prepared by:

West Central Airshed Society
Drayton Valley, Alberta

July 15, 2017

Attention: Mr. Ken Woolard
GBS Building
RR#1, Site 4, Box #1
Duffield AB T0E 0N0

Dear Sir:

**Monthly Ambient Air Quality Monitoring Report for June 2017
For TransAlta Utilities Corporation**

Enclosed are the reports for the continuous ambient air quality monitoring stations of the West Central Airshed Society network.

Network Stations are	AMS 907	Power
Identified as:	AMS 908	Meadows
	AMS 959	Wagner2

The person responsible for this reporting is Gary Redmond, Executive Director of West Central Airshed Society.

The following operational notes are included as required by the Air Monitoring Directive:

1. Concentrations in excess of the Clean Air (Maximum Levels) Regulation:

There were no readings in excess of guidelines as indicated in Air Monitoring Directive Section III.A.3. (a&b) for SO₂, NO₂, or PM_{2.5}.

2. Operational times less than 90 percent:

All analyzers returned operational uptimes of greater than 90% for the month of June.

3. Monitoring Notes:

AMS 907 (Power)

The NO_x analyzer returned an uptime of 96.9% due to a power disruption at the station, followed by instrument malfunctioning. All other analyzers and meteorological equipment returned uptimes of 99.9% percent due to the power disruption.

AMS 908 (Meadows)

All analyzers and meteorological equipment returned uptimes of 100% percent in June.

AMS 959 (Wagner2)

The SO₂ analyzer, wind instrument and relative humidity sensor returned uptimes of 97.4% for the month of June due to a power disruption at the station. The NO_x analyzer returned an uptime of 97.2%, due to the power disruption. The external temperature sensor returned an uptime of 93.1% due to power disruptions and intermittent instrument malfunctioning.

If additional information is required please contact Patrick Andersen at (780) 514-3533.

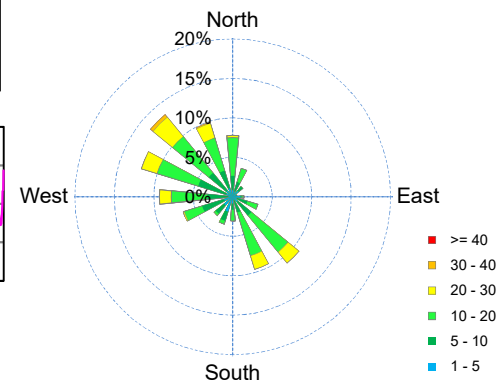
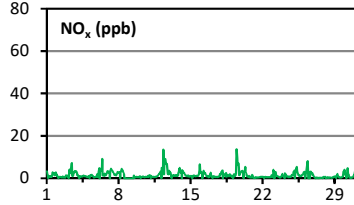
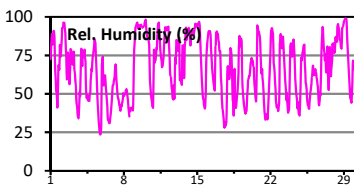
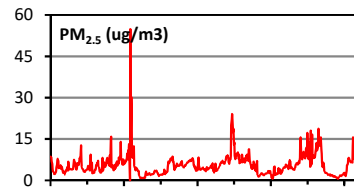
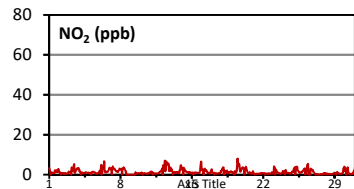
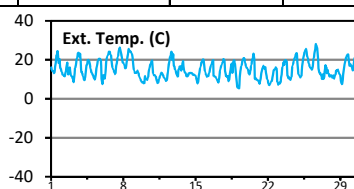
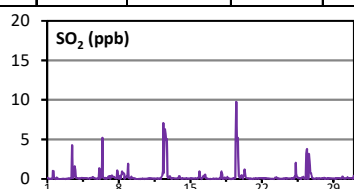
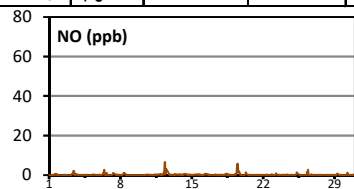
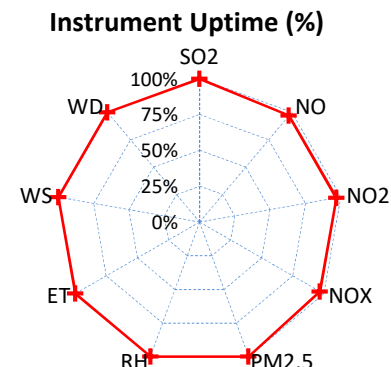
Sincerely,



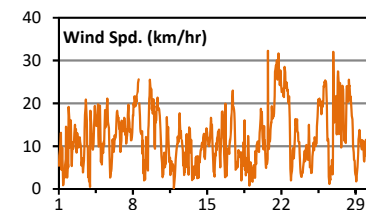
Patrick Andersen
Environmental Specialist

WCAS - June 2017 Power Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc Unit	Avg. Conc.	Uptime	Maximum		AAAQO Objective	Exceed No.	Maximum		AAAQO Objective	Exceed No.
				Conc	Time			Conc	Time		
SO ₂	ppb	0.3	99.9%	2.2	Jun-12	48	0	9.8	Jun-19 12:00	172	0
NO	ppb	0.2	96.9%	1.2	Jun-12	-	-	6.5	Jun-12 9:00	-	-
NO ₂	ppb	1.5	96.9%	3.8	Jun-12	-	-	8.0	Jun-19 12:00	159	0
NO _x	ppb	1.6	96.9%	5.0	Jun-12	-	-	13.7	Jun-19 12:00	-	-
PM _{2.5}	µg/m ³	6	99.9%	12	Jun-8	30	0	55	Jun-08 15:00	-	-



Wind Rose (km/hr)

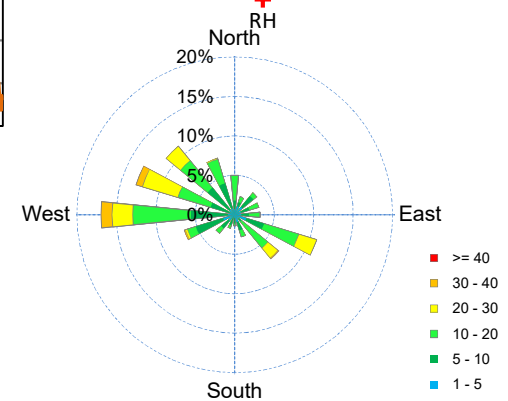
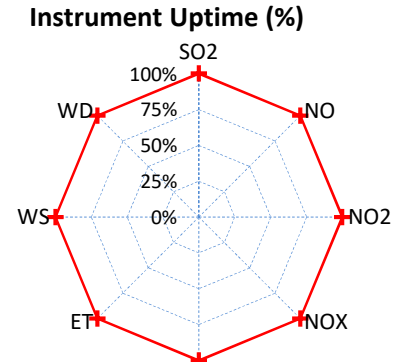
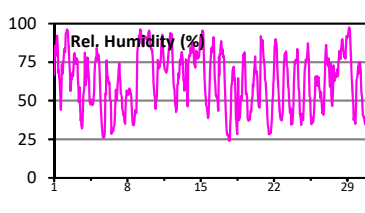
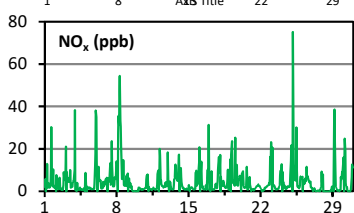
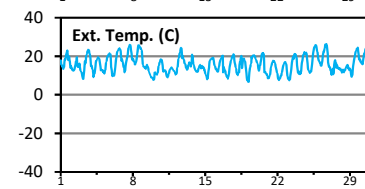
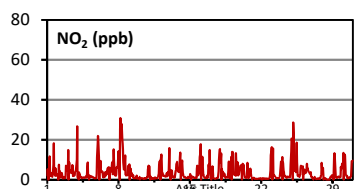
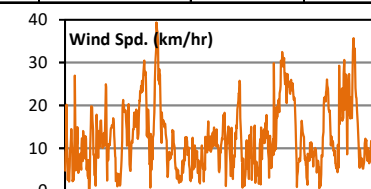
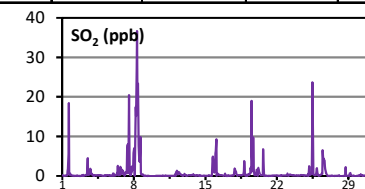
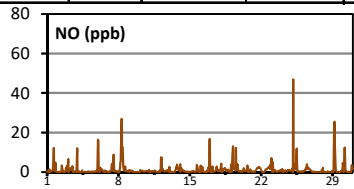


Monthly Summary

- * All data has been slope, intercept, and baseline corrected. Data may change after validation process.
- * The measured ambient concentrations of all parameters are within the AAAQO for the month of June.
- * All compliance parameters are above 90% operational for the month of June.
- * Routine calibration was performed on June 26.

WCAS - June 2017 Meadows Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc Unit	Avg. Conc.	Uptime	Maximum		AAAQO Objective	Exceed No.	Maximum		AAAQO Objective	Exceed No.
				Conc	Time			Conc	Time		
SO ₂	ppb	0.9	100.0%	9.3	Jun-8	48	0	36.7	Jun-08 8:00	172	0
NO	ppb	1.2	100.0%	4.6	Jun-8	-	-	47.0	Jun-25 4:00	-	-
NO ₂	ppb	3.8	100.0%	11.9	Jun-8	-	-	30.8	Jun-08 5:00	159	0
NO _x	ppb	4.9	100.0%	16.4	Jun-8	-	-	75.2	Jun-25 4:00	-	-



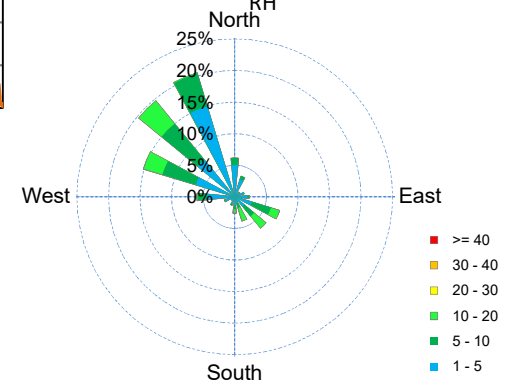
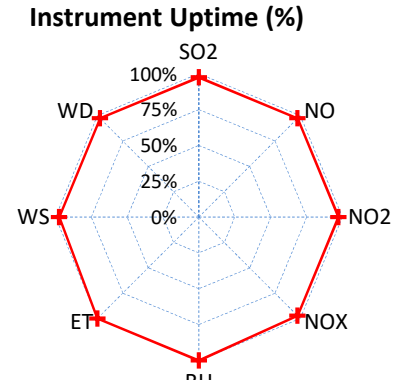
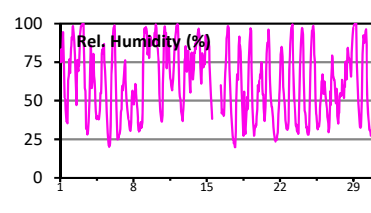
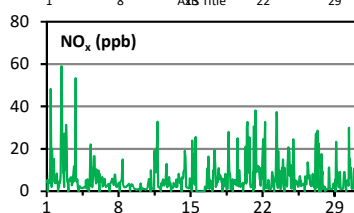
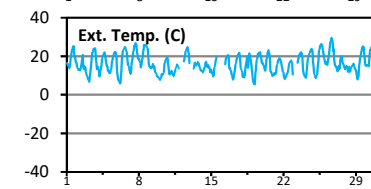
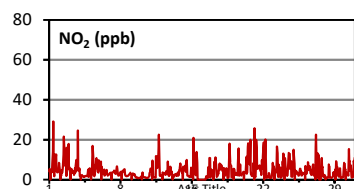
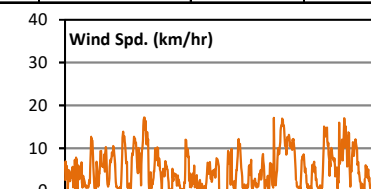
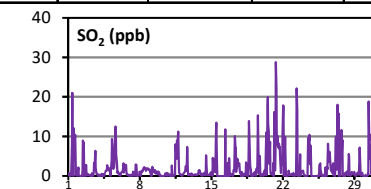
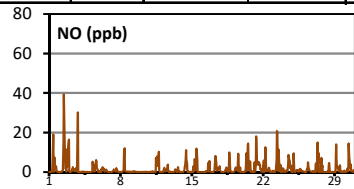
Wind Rose (km/hr)

Monthly Summary

- * All data has been slope, intercept, and baseline corrected. Data may change after validation process.
- * The measured ambient concentrations of all parameters are within the AAAQO for the month of June.
- * All compliance parameters are above 90% operational for the month of June.
- * Routine calibration was performed on June 28.

WCAS - June 2017 Wagner2 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc Unit	Avg. Conc.	Uptime	Maximum		AAAQO Objective	Exceed No.	Maximum		AAAQO Objective	Exceed No.
				Conc	Time			Conc	Time		
SO ₂	ppb	2.2	97.4%	7.5	Jun-21	48	0	28.8	Jun-21 8:00	172	0
NO	ppb	1.7	97.2%	7.5	Jun-2	-	-	39.3	Jun-02 11:00	-	-
NO ₂	ppb	4.8	97.2%	8.4	Jun-2	-	-	29.2	Jun-01 10:00	159	0
NO _x	ppb	6.6	97.2%	15.9	Jun-2	-	-	59.0	Jun-02 11:00	-	-



Monthly Summary

- * All data has been slope, intercept, and baseline corrected. Data may change after validation process.
- * The measured ambient concentrations of all parameters are within the AAAQO for the month of June.
- * All compliance parameters are above 90% operational for the month of June.
- * Routine calibration was performed on June 27.

WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
CONTINUOUS AIR MONITORING DATA**

**AMS 907
POWERS
JUNE 2017**

Operations and Data Collection by:
West Central Airshed Society
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:
West Central Airshed Society
Drayton Valley, Alberta

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

TransAlta / Powers Station 907												June 2017		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)
							P10	Q1	Median	Q3	P90	1-hour	24-hour	
SO ₂ (ppb)	34	685	99.9	0.3	0.0	9.7	0.0	0.0	0.1	0.1	0.5	0	0	0.002
NO (ppb)	34	664	96.9	0.2	0.0	6.5	0.0	0.0	0.1	0.2	0.5	-	-	-
NO ₂ (ppb)	34	664	96.9	1.5	0.0	8.0	0.4	0.6	1.0	2.0	3.1	0	0	0.004
NO _x (ppb)	34	664	96.9	1.6	0.0	13.7	0.4	0.6	1.1	2.2	3.4	-	-	-
Particulate Matter 2.5 microns (μ/m ³)	0	719	99.9	5.5	0.6	54.9	2.0	3.2	4.7	6.9	9.1	0	0	12.45 ug/m3
Wind Speed (kph)	0	719	99.9	12.1	0.1	32.3	3.9	7.0	11.1	16.5	21.2	-	-	-
Temperature (°C)	0	719	99.9	15.3	5.3	28.2	9.7	11.7	14.6	18.7	22.3	-	-	-
Relative Humidity (%)	0	719	99.9	66.2	23.5	99.0	40.7	49.6	66.6	82.8	92.3	-	-	-
Std Dev Wind Direction (deg)	0	719	99.9	21.7	2.5	88.6	9.9	12.5	16.8	23.8	42.3	-	-	-
Std Dev Wind Speed (kph)	0	719	99.9	3.4	0.5	19.2	1.4	2.1	3.1	4.3	5.5	-	-	-



WCAS - Power
Summary of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
June 2017

Maximum Value: 9.75 ppb on Jun 19 12:00		Maximum Daily Average: 2.24 ppb on Jun 12		Hours in Service: 720																																															
Minimum Value: 0.0 ppb on Jun 1 18:00		Minimum Daily Average: 0.01 ppb on Jun 2		Hours of Data: 685																																															
Maximum Diurnal Average: 0.64 ppb at hour 12		Minimum Diurnal Average: 0.10 ppb at hour 20		Hours of Missing Data: 35																																															
Monthly Average: 0.292 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.1 P ₉₀ = 0.5 P ₉₉ = 5.1		Hours of Calibration: 34																																															
				Percent Operational Time: 99.9																																															
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																											
1-Jun	0.1	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.13	1.03																									
2-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.03																									
3-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.1	2.3	4.3	0.1	0.1	0.2	0.8	1.4	1.6	1.1	0.4	0.2	0.1	0.1	0.1	0.1	0.58	4.28																									
4-Jun	0.1	0.1	0.0	Z	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.07	0.11																									
5-Jun	0.1	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.24																									
6-Jun	0.0	0.6	1.4	Z	1.1	0.6	0.2	0.4	0.8	5.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.51	5.21																									
7-Jun	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.5	1.0	0.5	0.2	0.1	0.28	1.05																									
8-Jun	0.0	0.1	0.4	Z	0.4	0.4	0.5	0.9	0.7	0.7	0.7	0.7	0.6	PF	0.2	0.2	0.2	0.2	0.3	0.3	0.5	1.9	0.6	0.1	0.49	1.91																									
9-Jun	0.0	0.1	0.0	Z	0.1	0.3	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.30																									
10-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.02	0.06																									
11-Jun	0.1	0.1	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.08																									
12-Jun	0.0	0.0	0.0	Z	0.3	0.4	0.5	1.0	7.1	0.7	4.1	5.8	6.3	5.7	5.2	4.9	5.0	3.2	0.2	0.1	0.1	0.2	0.2	0.2	2.24	7.08																									
13-Jun	0.3	0.2	0.1	Z	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.3	0.3	0.1	0.10	0.35																									
14-Jun	0.1	0.1	0.0	Z	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.05	0.07																									
15-Jun	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.9	0.3	0.1	0.12	0.92																									
16-Jun	0.0	0.0	0.0	Z	0.2	0.3	0.4	0.2	0.3	0.4	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.52																									
17-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.03	0.38																									
18-Jun	0.8	0.9	0.6	Z	0.1	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.16	0.95																									
19-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.0	0.1	4.9	9.7	7.2	4.9	5.1	5.2	2.9	0.3	0.2	0.2	0.1	0.1	0.3	0.5	1.83	9.75																									
20-Jun	0.3	0.2	0.2	Z	0.5	0.5	0.6	1.2	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.21	1.18																									
21-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.09																									
22-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.10																									
23-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.22																									
24-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.08																									
25-Jun	0.1	0.1	0.1	Z	0.3	0.2	0.4	2.0	0.7	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.24	2.03																									
26-Jun	0.2	0.2	0.1	Z	0.0	0.1	0.1	2.0	3.2	3.8	C	C	C	C	3.2	2.2	1.7	0.9	0.8	0.6	0.5	0.1	0.1	0.0	1.04	3.80																									
27-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.05	0.07																									
28-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.07	0.12																									
29-Jun	0.0	0.1	0.1	Z	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.3	0.3	0.2	0.1	0.09	0.29																									
30-Jun	0.1	0.1	0.0	Z	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.4	0.09	0.39																									
																								0.11	0.12	0.13	--	0.13	0.13	0.14	0.32	0.51	0.52	0.58	0.64	0.55	0.47	0.56	0.52	0.42	0.22	0.10	0.10	0.12	0.18	0.11	0.10	Diurnal Average			
																								0.81	0.95	1.35	--	1.09	0.56	0.55	2.03	7.08	5.21	4.93	9.75	7.24	5.69	5.25	5.19	5.03	3.25	0.77	0.62	1.05	1.91	0.64	0.45	Diurnal Maximum			
Z - zerospan																								C - Calibration		PF - Power Failure																									
Alberta Ambient Air Quality Objectives (AAQO): 1-hr 172 ppb 24-hr 48 ppb																																																			



WCAS - Power
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
June 2017

Maximum Value: 6.53 ppb on Jun 12 09:00 Maximum Daily Average: 1.20 ppb on Jun 12																				Hours in Service: 720 Hours of Data: 664 Hours of Missing Data: 56 Hours of Calibration: 34 Percent Operational Time: 96.9						
Minimum Value: 0.0 ppb on Jun 1 01:00 Minimum Daily Average: 0.01 ppb on Jun 2 Maximum Diurnal Average: 0.60 ppb at hour 9 Minimum Diurnal Average: 0.02 ppb at hour 1 Monthly Average: 0.200 ppb Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.5 P ₉₉ = 2.7																										
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.6	0.3	0.6	0.3	0.4	0.1	0.2	0.0	0.0	0.0	0.0	0.12	0.60
2-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.06
3-Jun	0.0	0.0	0.0	Z	0.0	0.5	0.5	0.7	0.8	2.0	2.0	0.1	0.0	0.1	0.2	0.6	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.36	1.97
4-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.10
5-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.06	0.27
6-Jun	0.0	0.0	0.0	Z	0.0	0.3	0.6	1.1	0.9	2.5	0.2	0.2	0.1	0.1	0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.32	2.55	
7-Jun	0.0	0.0	0.0	Z	0.0	0.3	1.0	0.9	0.8	0.7	0.5	0.3	0.2	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.23	0.96	
8-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.6	0.9	0.9	0.8	0.6	0.4	0.3	PF	PF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	0.95
9-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0.01	
10-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.06	0.16	
11-Jun	0.0	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.2	0.15	0.52
12-Jun	0.2	0.1	0.1	Z	0.3	0.8	1.4	1.6	6.5	0.3	2.3	2.9	2.8	2.2	1.8	1.7	1.4	0.5	0.2	0.4	0.2	0.1	0.1	1.20	6.53	
13-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.1	0.20	0.32
14-Jun	0.1	0.1	0.2	Z	0.4	0.3	0.4	0.5	0.6	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.20	0.59
15-Jun	0.1	0.1	0.0	Z	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.4	0.2	0.1	0.1	0.0	0.0	0.15	0.35	
16-Jun	0.1	0.1	0.0	Z	0.1	0.2	0.6	0.5	0.4	0.5	0.6	0.3	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.20	0.57	
17-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.05	0.23	
18-Jun	0.0	0.0	0.0	Z	0.1	0.2	0.3	0.3	0.2	0.1	0.6	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.13	0.64	
19-Jun	0.0	0.0	0.0	Z	0.1	0.4	0.5	0.4	0.2	0.5	3.5	5.7	3.5	1.9	1.7	1.6	1.0	0.1	0.1	0.3	0.0	0.0	0.0	0.93	5.67	
20-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.6	1.3	0.6	0.4	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.16	1.29	
21-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.09	
22-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.04	0.29	
23-Jun	0.0	0.0	0.0	Z	0.0	0.4	0.8	0.4	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.11	0.77	
24-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.05	0.25	
25-Jun	0.0	0.0	0.0	Z	0.0	0.2	0.5	1.3	0.8	0.7	0.3	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.20	1.30	
26-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.5	1.3	2.1	2.7	C	C	C	C	C	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.40	2.67	
27-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.02	0.06	
28-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.09	
29-Jun	0.0	0.0	0.1	Z	0.1	0.3	0.7	0.6	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.11	0.66	
30-Jun	0.0	0.0	0.0	Z	0.0	0.1	1.2	0.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.13	1.18	
																								Diurnal Average		
																								Diurnal Maximum		
																								0.02 0.02 0.02 -- 0.05 0.17 0.40 0.48 0.60 0.47 0.44 0.40 0.31 0.24 0.21 0.25 0.16 0.09 0.07 0.09 0.05 0.04 0.04 0.02		
																								0.15 0.13 0.18 -- 0.35 0.77 1.42 1.64 6.53 2.67 3.50 5.67 3.53 2.19 1.76 1.69 1.42 0.50 0.23 0.38 0.29 0.39 0.52 0.20		
Z - zerospan C - Calibration AF - Analyzer Failure PF - Power Failure																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																										



WCAS - Power
Summary of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
June 2017

Maximum Value: 8.02 ppb on Jun 19 12:00		Maximum Daily Average: 3.84 ppb on Jun 12		Hours in Service: 720																																													
Minimum Value: 0.0 ppb on Jun 27 19:00		Minimum Daily Average: 0.22 ppb on Jun 27		Hours of Data: 664																																													
Maximum Diurnal Average: 1.90 ppb at hour 22		Minimum Diurnal Average: 0.98 ppb at hour 19		Hours of Missing Data: 56																																													
Monthly Average: 1.459 ppb		Percentiles: P ₁ = 0.1 P ₁₀ = 0.4 Q ₁ = 0.6 Median = 1.0 Q ₃ = 2.0 P ₉₀ = 3.1 P ₉₉ = 6.0		Hours of Calibration: 34																																													
				Percent Operational Time: 96.9																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jun	3.3	2.1	1.4	Z	0.6	0.8	1.1	0.9	0.6	0.7	0.6	0.7	0.8	2.2	2.0	1.5	1.7	2.1	1.3	1.8	1.6	2.8	2.0	1.1	1.46	3.26																							
2-Jun	1.3	0.7	0.7	Z	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.7	0.4	0.6	0.6	0.5	0.4	0.3	0.7	1.4	1.4	1.2	0.68	1.41																							
3-Jun	1.2	1.3	1.3	Z	2.6	3.6	2.0	1.8	2.3	3.8	5.1	1.1	0.9	1.1	1.9	2.3	2.8	2.6	3.1	3.2	3.0	3.1	2.6	1.5	2.36	5.09																							
4-Jun	1.4	1.1	1.0	Z	0.7	0.9	0.9	0.7	0.7	0.7	0.7	0.9	0.9	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.7	0.5	0.7	0.88	1.41																							
5-Jun	0.8	0.9	0.9	Z	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.0	0.7	0.5	0.4	0.5	0.5	0.6	0.6	0.8	1.0	1.5	0.6	0.7	0.91	1.54																							
6-Jun	1.6	3.1	4.8	Z	3.1	3.4	2.9	3.6	3.1	6.6	1.3	1.2	1.2	1.6	1.2	1.3	1.4	1.4	1.5	1.9	2.4	3.3	3.4	3.0	2.54	6.62																							
7-Jun	2.7	2.8	2.9	Z	3.4	4.1	3.5	3.3	2.9	2.5	2.7	2.3	1.9	1.6	1.6	1.6	1.7	1.3	1.3	1.7	2.3	2.9	3.0	2.6	2.46	4.11																							
8-Jun	2.6	2.7	2.8	Z	3.1	3.1	3.3	3.5	2.9	2.8	2.4	2.0	1.6	PF	PF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	3.49																							
9-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	1.2	0.5	0.5	0.5	0.6	0.7	0.6	0.7	0.6	0.5	0.5	0.6	0.7	--	1.21																							
10-Jun	0.7	0.9	0.7	Z	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.7	1.0	0.7	0.9	1.5	0.66	1.49																							
11-Jun	1.2	1.3	1.2	Z	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.8	1.1	1.2	1.6	1.7	1.9	0.86	1.94																							
12-Jun	2.0	3.0	3.0	Z	4.6	4.0	3.6	3.4	6.9	1.6	4.7	6.1	6.4	5.8	5.1	5.0	5.5	4.6	1.8	1.9	1.7	3.5	2.0	2.0	3.84	6.91																							
13-Jun	2.6	2.0	1.3	Z	1.1	1.2	1.2	1.1	0.9	1.0	1.0	0.9	0.9	1.1	1.2	1.0	1.1	0.9	1.0	2.1	2.5	4.3	4.7	3.2	1.67	4.72																							
14-Jun	2.8	2.5	3.0	Z	3.5	3.1	2.2	1.9	2.0	1.8	1.5	1.1	1.1	1.1	1.0	0.9	1.1	0.9	0.9	1.2	0.8	0.8	0.7	0.9	1.59	3.47																							
15-Jun	1.0	1.0	0.8	Z	0.9	0.9	1.0	1.0	1.0	0.9	0.8	0.8	0.7	0.9	0.9	0.9	0.9	0.9	1.1	1.6	3.7	6.4	3.8	2.4	1.48	6.44																							
16-Jun	2.7	2.6	2.5	Z	2.3	2.3	3.0	2.6	1.8	1.9	1.9	1.3	0.9	0.8	0.7	0.9	0.9	0.5	0.8	0.9	0.7	1.7	2.6	1.5	1.64	2.99																							
17-Jun	0.9	0.8	0.7	Z	0.9	0.8	0.7	0.6	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.7	0.7	0.7	0.7	0.9	1.8	1.6	2.3	2.9	0.94	2.88																							
18-Jun	3.0	3.6	3.6	Z	2.2	1.7	1.2	1.3	1.0	0.9	1.9	0.7	0.8	1.0	1.2	0.9	0.9	1.0	1.5	1.7	0.9	1.3	1.4	1.1	1.51	3.60																							
19-Jun	0.7	0.6	0.8	Z	1.6	1.5	1.2	1.3	0.9	1.5	5.2	8.0	6.0	4.5	4.8	5.4	3.8	1.4	1.5	1.7	2.4	3.0	3.5	3.4	2.80	8.02																							
20-Jun	3.5	3.1	2.8	Z	3.0	3.2	3.5	3.9	2.5	1.9	1.5	1.0	0.7	0.8	0.8	0.8	1.1	0.6	0.5	0.5	0.3	0.4	1.0	1.6	1.69	3.94																							
21-Jun	1.4	0.5	0.2	Z	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.47	1.36																							
22-Jun	0.7	0.6	0.6	Z	0.5	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	1.1	1.0	0.5	0.7	0.56	1.10																							
23-Jun	0.9	4.0	2.9	Z	2.9	2.5	2.2	1.3	1.0	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.5	0.7	0.9	1.6	1.8	1.0	1.30	3.97																							
24-Jun	0.9	0.9	1.2	Z	2.3	1.5	1.5	0.9	0.7	0.7	0.7	0.8	0.7	0.5	0.7	0.7	0.6	0.5	0.7	1.5	1.2	1.2	1.4	1.6	1.03	2.31																							
25-Jun	3.1	3.5	3.3	Z	3.3	3.9	2.9	3.9	2.4	2.1	1.7	1.3	1.3	0.9	1.0	1.1	1.0	1.0	1.3	1.3	1.6	1.8	2.1	2.3	2.09	3.94																							
26-Jun	3.0	3.1	2.7	Z	2.0	2.3	2.9	4.5	5.2	5.4	C	C	C	C	C	2.9	3.0	2.5	2.5	2.3	2.3	1.4	1.4	1.0	2.79	5.40																							
27-Jun	0.7	0.5	0.2	Z	0.0	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.4	0.4	0.7	0.5	0.22	0.73																							
28-Jun	0.7	0.6	0.6	Z	0.2	0.3	0.3	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.35	0.80																							
29-Jun	0.8	0.6	0.6	Z	0.4	1.1	1.3	1.0	0.7	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.5	0.7	0.8	1.9	3.4	2.1	4.0	1.00	3.96																							
30-Jun	2.4	1.6	1.8	Z	1.3	1.3	3.5	1.7	1.5	0.6	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.6	1.3	1.6	1.6	3.2	1.15	3.54																							
																								1.75	1.79	1.74	--	1.73	1.78	1.73	1.66	1.58	1.49	1.41	1.26	1.11	1.09	1.09	1.17	1.19	1.00	0.98	1.17	1.42	1.90	1.78	1.71	Diurnal Average	
																								3.50	3.97	4.83	--	4.61	4.11	3.55	4.47	6.91	6.62	5.16	8.02	6.38	5.83	5.13	5.40	5.48	4.64	3.08	3.23	3.74	6.44	4.72	3.96	Diurnal Maximum	
Z - zerospan C - Calibration AF - Analyzer Failure PF - Power Failure																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																																																	



WCAS - Power
Summary of Hourly Averages

NOx (NO_x) - ppb
June 2017

Maximum Value: 13.67 ppb on Jun 19 12:00		Maximum Daily Average: 5.04 ppb on Jun 12		Hours in Service: 720																																													
Minimum Value: 0.0 ppb on Jun 27 20:00		Minimum Daily Average: 0.23 ppb on Jun 27		Hours of Data: 664																																													
Maximum Diurnal Average: 2.18 ppb at hour 9		Minimum Diurnal Average: 1.04 ppb at hour 19		Hours of Missing Data: 56																																													
Monthly Average: 1.646 ppb		Percentiles: P ₁ = 0.1 P ₁₀ = 0.4 Q ₁ = 0.6 Median = 1.1 Q ₃ = 2.2 P ₉₀ = 3.4 P ₉₉ = 8.6		Hours of Calibration: 34																																													
				Percent Operational Time: 96.9																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jun	3.3	2.1	1.4	Z	0.6	0.7	1.1	0.9	0.6	0.8	0.7	0.8	0.9	2.7	2.2	2.1	2.0	2.5	1.4	1.9	1.6	2.8	2.0	1.1	1.57	3.28																							
2-Jun	1.2	0.6	0.7	Z	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.8	0.4	0.5	0.6	0.5	0.4	0.3	0.6	1.4	1.3	1.2	0.66	1.36																							
3-Jun	1.1	1.2	1.3	Z	2.6	4.2	2.6	2.5	3.1	5.8	7.1	1.2	0.9	1.2	2.2	2.9	3.1	2.8	3.3	3.4	3.0	3.1	2.5	1.4	2.73	7.07																							
4-Jun	1.4	1.1	1.0	Z	0.7	1.0	1.0	0.8	0.8	0.8	0.8	0.9	1.0	1.2	1.1	1.0	0.9	1.0	0.9	0.9	0.8	0.6	0.5	0.7	0.91	1.38																							
5-Jun	0.8	0.9	0.8	Z	1.2	1.3	1.4	1.3	1.6	1.5	1.3	1.1	0.8	0.5	0.4	0.4	0.5	0.5	0.6	0.8	1.0	1.8	0.6	0.6	0.95	1.80																							
6-Jun	1.5	3.1	4.8	Z	3.2	3.7	3.5	4.6	4.1	9.2	1.5	1.3	1.2	1.7	1.3	2.2	1.4	1.4	1.5	1.9	2.4	3.3	3.3	3.0	2.83	9.17																							
7-Jun	2.7	2.7	2.8	Z	3.4	4.4	4.5	4.1	3.7	3.2	3.3	2.6	2.1	1.6	1.6	1.6	1.9	1.3	1.4	1.8	2.3	2.9	3.0	2.5	2.68	4.49																							
8-Jun	2.6	2.7	2.8	Z	3.1	3.2	3.9	4.5	3.8	3.7	3.0	2.4	1.9	PF	PF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	4.49																							
9-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	1.2	0.4	0.4	0.4	0.5	0.6	0.5	0.6	0.6	0.4	0.5	0.6	0.6	--	1.21																							
10-Jun	0.6	0.9	0.6	Z	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.6	0.5	0.5	0.6	0.7	0.6	0.6	0.7	0.8	1.1	0.6	0.9	1.5	0.71	1.47																							
11-Jun	1.3	1.3	1.3	Z	0.8	0.7	0.7	0.5	0.7	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.8	0.9	1.0	1.3	1.4	1.9	2.2	2.1	1.01	2.23																							
12-Jun	2.2	3.0	3.1	Z	4.9	4.8	5.0	5.0	13.5	1.9	7.0	8.9	9.1	8.0	6.9	6.7	6.9	5.2	1.9	2.2	1.9	3.5	2.0	2.1	5.04	13.45																							
13-Jun	2.7	2.1	1.4	Z	1.2	1.3	1.4	1.4	1.1	1.3	1.3	1.2	1.1	1.3	1.4	1.3	1.4	1.0	1.2	2.4	2.6	4.6	4.9	3.3	1.86	4.93																							
14-Jun	2.9	2.6	3.2	Z	3.8	3.4	2.7	2.4	2.6	2.3	1.8	1.3	1.3	1.3	1.0	0.9	1.2	0.9	1.0	1.3	0.8	0.8	0.8	0.9	1.79	3.84																							
15-Jun	1.1	1.0	0.9	Z	0.9	1.0	1.2	1.2	1.2	1.1	1.0	0.9	0.9	1.2	1.2	1.1	1.0	1.3	1.3	1.7	3.8	6.5	3.9	2.4	1.63	6.47																							
16-Jun	2.7	2.6	2.6	Z	2.4	2.5	3.6	3.1	2.2	2.5	2.5	1.5	1.1	1.0	0.9	1.2	1.1	0.5	0.8	0.9	0.7	1.7	2.6	1.5	1.83	3.56																							
17-Jun	0.9	0.8	0.7	Z	0.9	0.9	0.8	0.7	0.6	0.5	0.6	0.6	0.6	0.5	0.6	0.7	0.7	0.8	0.7	0.9	2.0	1.5	2.3	2.9	0.97	2.88																							
18-Jun	3.1	3.6	3.6	Z	2.2	1.9	1.5	1.5	1.2	1.0	2.5	0.8	0.8	1.1	1.4	1.0	1.0	1.0	1.5	1.8	0.9	1.3	1.3	1.1	1.62	3.62																							
19-Jun	0.6	0.5	0.7	Z	1.6	1.8	1.7	1.7	1.1	1.9	8.7	13.7	9.5	6.3	6.5	7.0	4.8	1.4	1.5	1.9	2.3	3.0	3.4	3.3	3.70	13.67																							
20-Jun	3.5	3.1	2.7	Z	3.0	3.3	4.1	5.3	3.2	2.2	1.6	1.1	0.8	0.8	0.9	0.8	1.1	0.5	0.5	0.5	0.3	0.3	0.9	1.5	1.82	5.25																							
21-Jun	1.3	0.4	0.2	Z	0.2	0.2	0.4	0.5	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.47	1.29																							
22-Jun	0.7	0.6	0.5	Z	0.5	0.6	0.7	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	1.4	0.9	0.5	0.7	0.60	1.38																							
23-Jun	0.8	3.9	2.9	Z	3.0	2.9	2.9	1.7	1.2	1.1	1.0	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.6	0.8	0.9	1.5	2.0	1.0	1.39	3.95																							
24-Jun	0.9	0.9	1.1	Z	2.3	1.6	1.7	1.1	0.8	0.8	0.8	0.8	0.7	0.5	0.7	0.8	0.6	0.6	0.8	1.5	1.2	1.2	1.3	1.5	1.06	2.33																							
25-Jun	3.0	3.5	3.3	Z	3.3	4.1	3.4	5.3	3.3	2.7	1.9	1.4	1.5	1.1	1.0	1.1	1.1	1.0	1.3	1.3	1.6	1.7	2.1	2.3	2.28	5.26																							
26-Jun	2.9	3.0	2.6	Z	1.9	2.4	3.4	5.8	7.3	8.1	C	C	C	C	C	3.1	3.1	2.6	2.7	2.3	2.3	1.4	1.4	1.0	3.18	8.08																							
27-Jun	0.7	0.5	0.1	Z	0.0	0.2	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.3	0.4	0.7	0.5	0.23	0.70																							
28-Jun	0.7	0.5	0.6	Z	0.2	0.3	0.3	0.5	0.3	0.2	0.2	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.5	0.7	0.9	0.39	0.86																						
29-Jun	0.8	0.6	0.6	Z	0.5	1.4	2.0	1.5	1.0	0.7	0.5	0.4	0.3	0.3	0.3	0.4	0.4	0.5	0.7	0.8	1.9	3.4	2.1	3.9	1.09	3.94																							
30-Jun	2.3	1.6	1.8	Z	1.3	1.4	4.7	2.4	1.9	0.7	0.3	0.2	0.1	0.3	0.2	0.3	0.4	0.3	0.4	0.7	1.3	1.6	1.5	3.2	1.26	4.73																							
																								1.73	1.78	1.73	--	1.76	1.94	2.13	2.14	2.18	1.96	1.86	1.66	1.41	1.32	1.29	1.41	1.34	1.08	1.04	1.25	1.45	1.91	1.79	1.70	Diurnal Average	
																								3.46	3.95	4.79	--	4.87	4.82	5.00	5.76	13.45	9.17	8.66	13.67	9.55	8.01	6.88	6.98	6.89	5.15	3.26	3.39	3.81	6.47	4.93	3.94	Diurnal Maximum	
Z - zerospan C - Calibration AF - Analyzer Failure PF - Power Failure																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																	



WCAS - Power
Summary of Hourly Averages

PM2.5 (PM_{2.5}) - µg/m³
June 2017

Maximum Value: 54.89 µg/m ³ on Jun 8 15:00 Minimum Value: 0.6 µg/m ³ on Jun 22 04:00 Maximum Diurnal Average: 6.67 µg/m ³ at hour 15 Monthly Average: 5.523 µg/m ³		Maximum Daily Average: 12.45 µg/m ³ on Jun 8 Minimum Daily Average: 1.48 µg/m ³ on Jun 28 Minimum Diurnal Average: 4.54 µg/m ³ at hour 24 Percentiles: P ₁ = 0.8 P ₁₀ = 2.0 Q ₁ = 3.2 Median = 4.7 O ₃ = 6.9 P ₉₀ = 9.1 P ₉₉ = 18.5		Hours in Service: 720 Hours of Data: 719 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9																																												
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Jun	8.6	8.4	6.8	6.0	4.1	3.1	3.1	2.7	2.3	2.3	2.3	2.8	3.4	4.7	5.7	7.4	7.8	7.1	4.4	4.4	4.6	5.1	5.5	4.2	4.87	8.58																						
2-Jun	4.9	4.9	4.2	3.6	2.7	3.4	3.1	2.4	2.1	2.8	3.0	3.7	4.1	4.1	4.8	3.6	6.8	5.5	4.0	3.9	4.0	4.1	4.1	3.9	3.91	6.77																						
3-Jun	4.0	3.8	3.9	4.1	5.3	7.4	6.3	5.8	6.4	5.1	3.9	3.9	4.5	6.1	5.6	6.2	5.6	6.7	8.1	7.6	8.1	12.7	7.5	5.0	5.99	12.66																						
4-Jun	4.2	4.1	3.9	3.3	3.2	3.1	3.2	3.2	3.6	3.8	3.7	4.0	4.1	5.2	4.4	4.3	4.2	3.6	3.6	9.3	5.5	5.6	6.4	2.6	4.27	9.34																						
5-Jun	2.6	2.8	2.8	2.7	3.4	3.8	3.7	4.3	5.5	5.5	6.3	6.1	7.1	5.2	4.7	4.2	3.1	2.8	2.8	2.8	3.8	3.4	8.2	3.4	4.21	8.17																						
6-Jun	3.7	5.2	6.5	5.2	5.1	4.9	5.3	6.6	7.3	8.2	6.5	6.5	5.9	7.0	5.3	9.1	5.2	14.9	15.8	4.7	5.5	4.7	5.4	3.8	6.59	15.81																						
7-Jun	3.6	3.8	5.6	4.1	4.4	4.9	6.3	6.9	5.4	5.4	6.6	6.0	8.3	7.3	8.1	9.2	13.9	8.3	7.7	6.4	5.7	5.6	7.5	6.0	6.54	13.91																						
8-Jun	5.9	6.1	6.6	6.6	6.8	7.7	7.8	9.7	7.6	11.0	11.7	13.1	8.4	PF	54.9	12.6	30.2	26.3	9.8	8.1	9.3	8.5	12.3	5.4	12.45	54.89																						
9-Jun	4.6	4.7	3.7	4.4	4.6	4.1	4.0	3.4	3.3	3.4	1.9	1.3	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.8	1.0	0.9	0.8	2.24	4.67																						
10-Jun	0.9	2.8	3.2	2.5	2.0	2.1	2.3	2.1	2.1	2.6	2.6	2.2	1.9	2.0	2.1	2.3	2.2	2.3	2.3	2.4	2.6	3.3	3.5	3.3	2.40	3.54																						
11-Jun	3.3	3.4	3.5	3.0	2.6	2.6	2.2	1.5	1.7	1.9	2.0	2.0	2.2	2.2	2.0	2.0	2.1	2.3	2.3	2.4	3.9	2.3	2.2	2.7	2.43	3.86																						
12-Jun	3.0	2.9	2.9	3.2	4.9	6.9	6.7	6.1	6.5	6.9	7.9	7.4	7.8	7.5	7.1	8.6	6.6	6.7	4.3	3.8	4.7	5.0	4.6	4.8	5.71	8.61																						
13-Jun	5.9	6.1	5.6	5.2	5.3	5.2	5.3	5.3	5.8	5.8	6.4	5.8	7.0	5.4	5.2	4.8	4.8	4.7	5.0	5.3	5.2	5.7	5.8	6.2	5.54	7.02																						
14-Jun	6.4	6.4	6.6	6.9	6.7	7.2	7.3	7.5	7.0	7.0	7.3	7.3	8.0	7.9	6.9	5.5	5.5	4.6	4.3	4.9	3.6	3.4	3.9	3.8	6.08	8.01																						
15-Jun	3.6	6.9	8.3	5.5	4.6	3.9	3.9	3.7	4.0	4.2	4.3	4.4	4.6	4.4	4.1	3.8	3.9	3.6	3.9	3.3	3.9	4.8	4.2	3.9	4.40	8.25																						
16-Jun	4.3	4.4	4.4	4.3	4.6	4.9	5.2	4.5	4.7	5.7	6.1	4.4	3.4	3.3	2.8	3.2	3.7	6.1	3.5	3.4	3.5	3.6	3.9	4.2	4.25	6.14																						
17-Jun	4.6	4.6	5.0	5.4	6.0	6.5	6.6	6.4	6.5	7.1	6.8	6.6	6.2	6.0	6.4	6.5	7.3	8.1	8.8	8.6	8.6	9.1	8.3	6.5	6.77	9.13																						
18-Jun	6.0	6.8	7.6	7.6	8.9	20.0	22.1	24.0	22.0	17.4	18.7	12.9	13.7	9.0	7.7	8.3	8.5	9.6	9.5	9.7	10.1	9.8	7.7	9.2	11.95	24.04																						
19-Jun	6.2	6.3	6.5	6.6	7.3	7.0	9.3	6.6	7.3	7.5	7.1	7.9	6.4	7.3	7.0	8.9	8.5	9.3	9.1	8.3	7.0	11.2	11.3	7.3	7.79	11.33																						
20-Jun	6.7	6.2	5.4	4.4	4.1	5.5	4.3	4.6	6.8	6.8	6.0	4.3	3.6	4.5	3.3	6.1	7.0	2.1	1.6	1.5	1.3	1.4	1.6	1.9	4.20	6.96																						
21-Jun	2.1	2.3	2.5	2.5	2.4	2.1	2.1	1.9	1.9	1.9	2.3	2.3	2.4	2.5	2.5	2.5	2.9	3.3	3.4	3.2	2.6	3.2	3.4	2.5	2.53	3.42																						
22-Jun	2.1	0.9	0.7	0.6	0.7	1.1	2.7	4.7	5.1	2.0	2.6	2.2	2.4	2.2	2.2	2.4	2.4	4.4	2.9	3.5	4.1	2.6	2.3	2.4	2.48	5.07																						
23-Jun	2.5	3.5	3.3	4.0	4.5	4.6	4.8	4.6	4.6	4.9	5.7	5.2	5.4	4.9	5.0	4.6	4.1	5.6	7.0	7.3	6.8	4.7	4.4	4.7	4.87	7.33																						
24-Jun	4.6	4.4	4.0	4.1	4.2	3.8	3.8	4.6	5.3	5.7	6.2	6.2	6.1	5.8	6.2	6.7	6.2	6.2	8.2	15.3	15.6	9.2	8.1	7.6	6.59	15.57																						
25-Jun	9.4	9.9	10.4	9.1	8.3	8.8	7.9	9.1	11.6	11.9	8.7	17.2	11.4	14.2	7.7	11.4	13.8	9.7	4.9	18.1	5.5	6.1	16.6	9.0	10.45	18.05																						
26-Jun	9.1	8.4	8.0	8.4	8.2	8.6	10.5	11.4	13.6	10.8	10.9	11.9	13.5	18.7	13.3	12.6	12.4	14.3	15.6	11.2	9.7	6.4	4.8	5.5	10.75	18.73																						
27-Jun	6.5	5.2	3.4	2.9	2.7	2.7	2.7	2.7	2.5	2.3	2.0	2.1	2.2	2.1	1.8	1.9	2.2	1.6	1.7	1.8	1.9	1.8	1.5	1.3	2.48	6.47																						
28-Jun	1.4	1.4	1.5	1.3	1.2	1.1	1.0	1.0	0.9	0.7	0.6	0.9	1.4	1.6	1.7	1.7	1.6	1.5	1.6	1.9	2.0	2.3	2.5	2.7	1.48	2.74																						
29-Jun	2.7	1.9	1.9	1.6	2.2	3.5	5.5	5.7	6.3	8.0	8.2	7.6	7.5	7.1	6.7	6.6	6.5	6.6	6.4	12.4	15.6	10.8	7.8	7.7	6.53	15.63																						
30-Jun	7.8	8.1	8.1	7.2	6.8	6.9	7.7	7.5	8.1	5.8	4.0	3.5	3.4	4.3	3.9	3.6	3.5	3.4	3.2	3.3	3.7	3.9	3.1	3.8	5.20	8.13																						
																								4.71	4.89	4.90	4.55	4.59	5.25	5.56	5.69	5.93	5.81	5.76	5.72	5.58	5.62	6.67	5.72	6.45	6.41	5.56	6.00	5.63	5.37	5.65	4.54	Diurnal Average
																								9.38	9.94	10.37	9.15	8.91	19.96	22.13	24.04	22.05	17.42	18.71	17.23	13.74	18.73	54.89	12.64	30.21	26.33	15.81	18.05	15.63	12.66	16.64	9.17	Diurnal Maximum
PF - Power Failure																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m ³ 24-hr 30 ul/m ³																																																

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 907, Power

Calibration Date: June 26, 2017

Parameter: NO/NO₂/NO_x

Instrument: Teco 42 i

Serial Number: 1153630147

Previous Calibration Date: May 26 2017

Calibration: Routine

Calibration Equipment: SABIO 2010 sn 04300810

Barometric Pressure: 27.00" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: FF27662

Temperature: 21.5° C

Cylinder Concentration: 11.9 ppm NO, 12.0 NO_x

In Service: June 2 2016; exp Jan 20 2019

Technician: Dean Yustak

Instrument Settings	NO bkg ppb	NO _x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO _x Coefficient	NO ₂ Coefficient	Monitoring Range
Previous	3.0	3.4	na	0.946	0.998	0.993	300 ppb
Current	2.9	3.2	na	0.958	1.004	0.993	300 ppb

NO	Final Zero: -0.6 ppb	Final Span: 123.2 ppb	As Found Correction Factor: 1.000
NO ₂	Final Zero: 1.2 ppb	Final Span: 16.9 ppb	As Found Correction Factor: NA
NO _x	Final Zero: 0.3 ppb	Final Span: 139.8 ppb	As Found Correction Factor: 1.007

Results of Linear Regression			Slope	Intercept	R ²
NO	R _c vs C _c	Previous	99.949950	17.451830	0.999991
		Current	100.355700	56.298470	0.999942
	C _i vs C _c	Current	1.000000	0.000030	0.999941
NO ₂	R _c vs C _c	Previous	99.743330	-53.996060	0.999991
		Current	100.677600	-25.766310	0.999982
	C _i vs C _c	Current	1.000000	-0.000018	0.999983
NO _x	R _c vs C _c	Previous	99.705740	25.892530	0.999991
		Current	100.282300	63.888860	0.999947
	C _i vs C _c	Current	1.000000	0.000000	0.999947

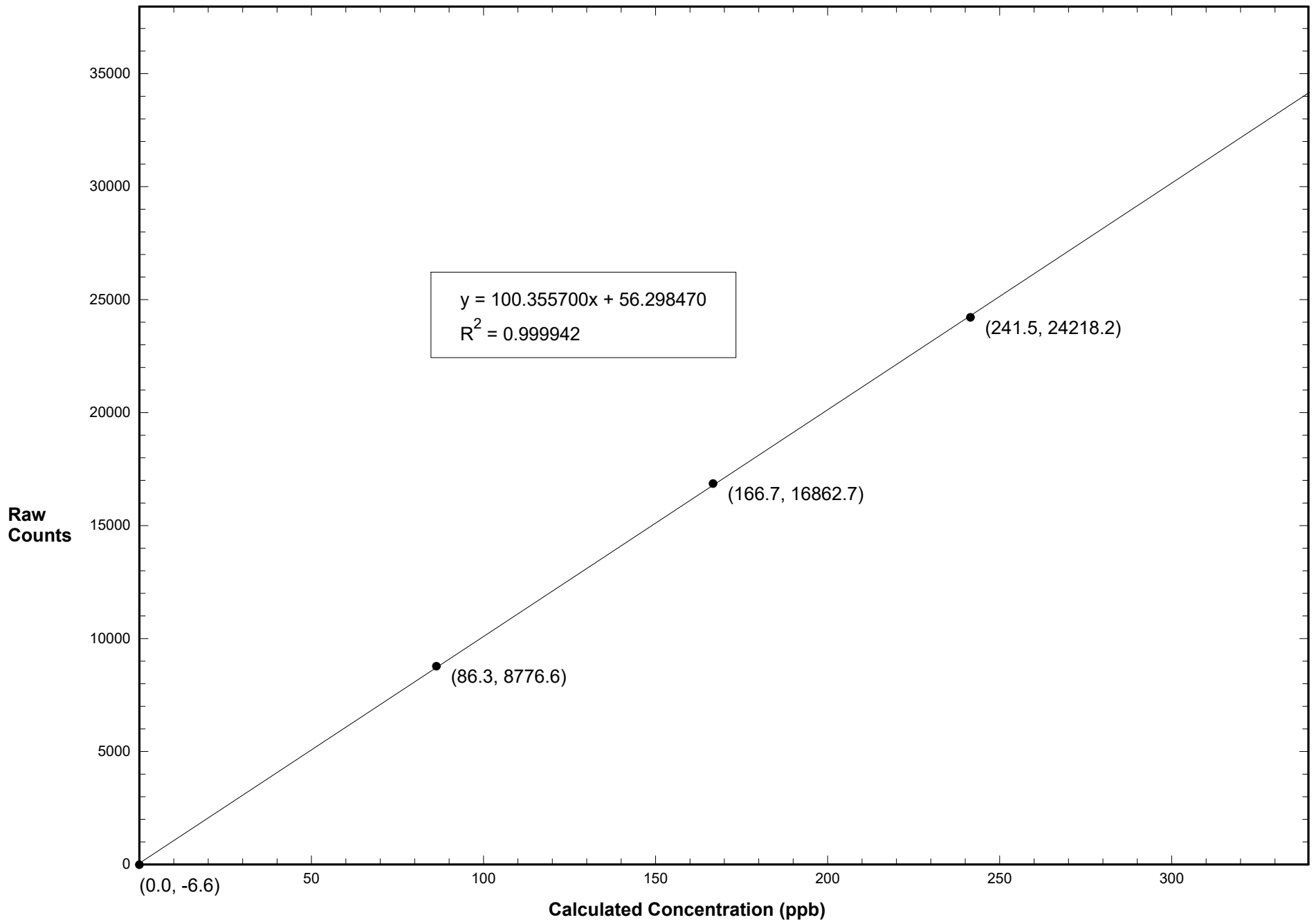
Comments: Sample Flow: 0.648 lpm

Calibration Data Summary (Page 2)

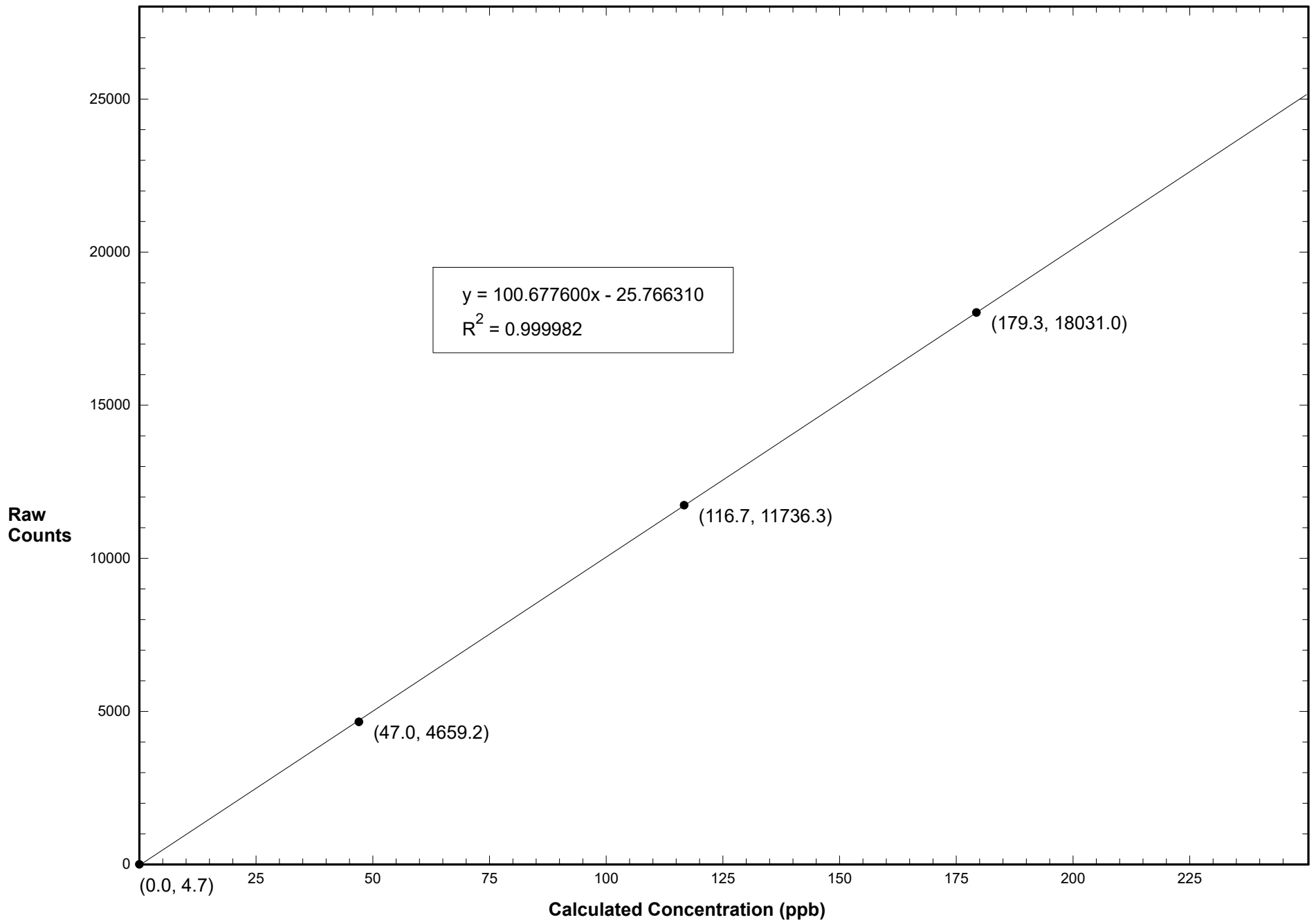
June 26, 2017 - Station 907

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i		
0.07530	3.635	241.5	24218.2	240.8	1.003		
0.05190	3.653	166.7	16862.7	167.5	0.995		
0.02666	3.650	86.3	8776.6	86.9	0.993		
0.00000	3.610	0.0	-6.6	-0.6			
NO Calibration					Average Correction Factor:	0.997	
0.07530	3.635	243.5	24415.9	242.8	1.003		
0.05190	3.653	168.1	16990.9	168.8	0.996		
0.02666	3.650	87.0	8853.3	87.6	0.993		
0.00000	3.610	0.0	1.6	-0.6			
NO _x Calibration					Average Correction Factor:	0.997	
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO ₂ , C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i	Converter Efficiency C _i /C _c
242.2	6369.4	62.9	179.3	18031.0	179.4	1.000	1.000
242.2	12653.3	125.5	116.7	11736.3	116.8	0.999	1.001
242.2	19647.2	195.2	47.0	4659.2	46.5	1.010	0.990
			0.0	4.7	0.3		
						Average Correction Factor:	1.003
NO ₂ Gas Phase Titration						Average Converter Efficiency:	0.997
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	1.001	1.003	0.2				
NO ₂	0.998	1.000	0.2				
NO _x	1.001	1.003	0.2				

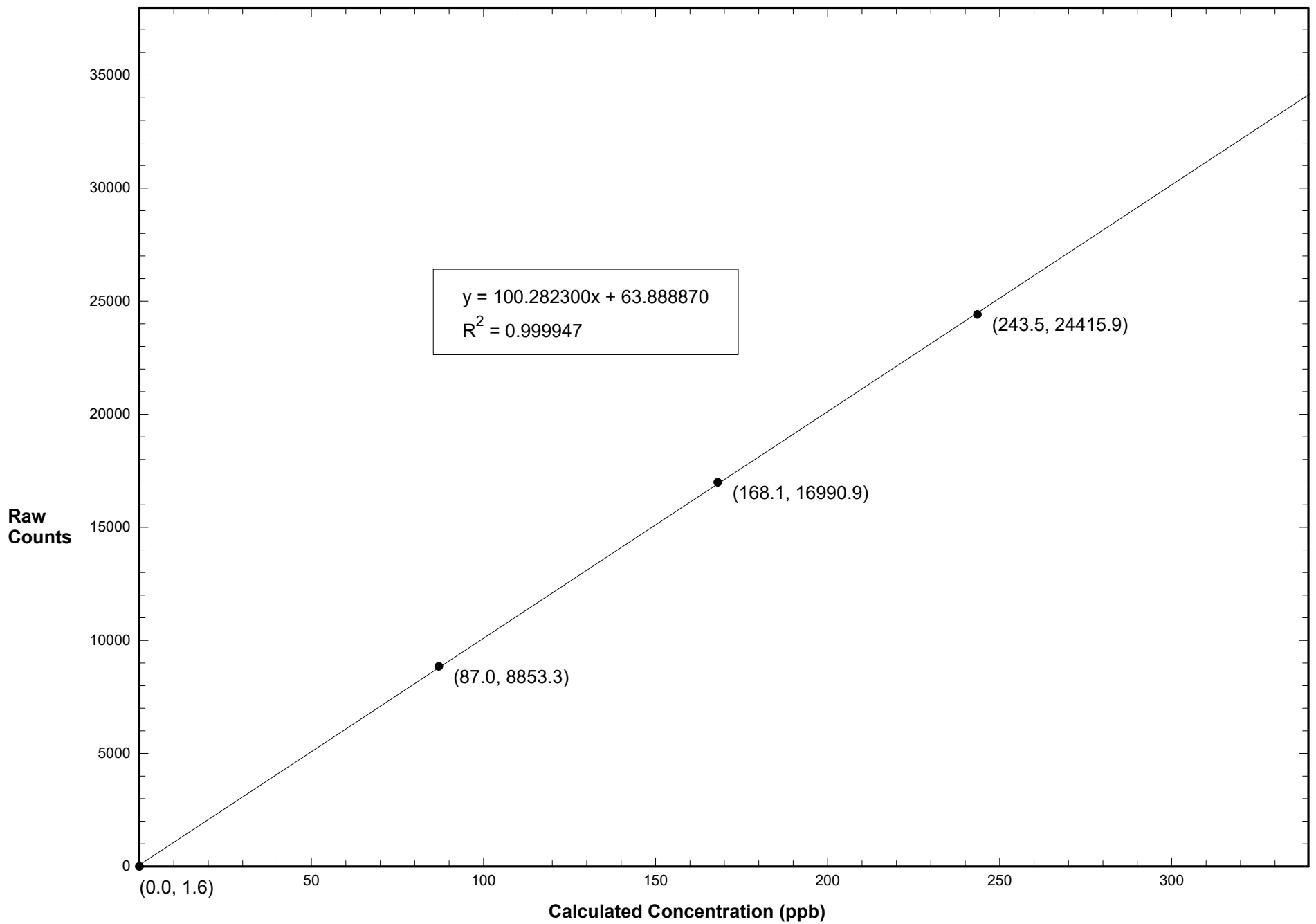
Station 907 NO June 26, 2017: Linear Regression



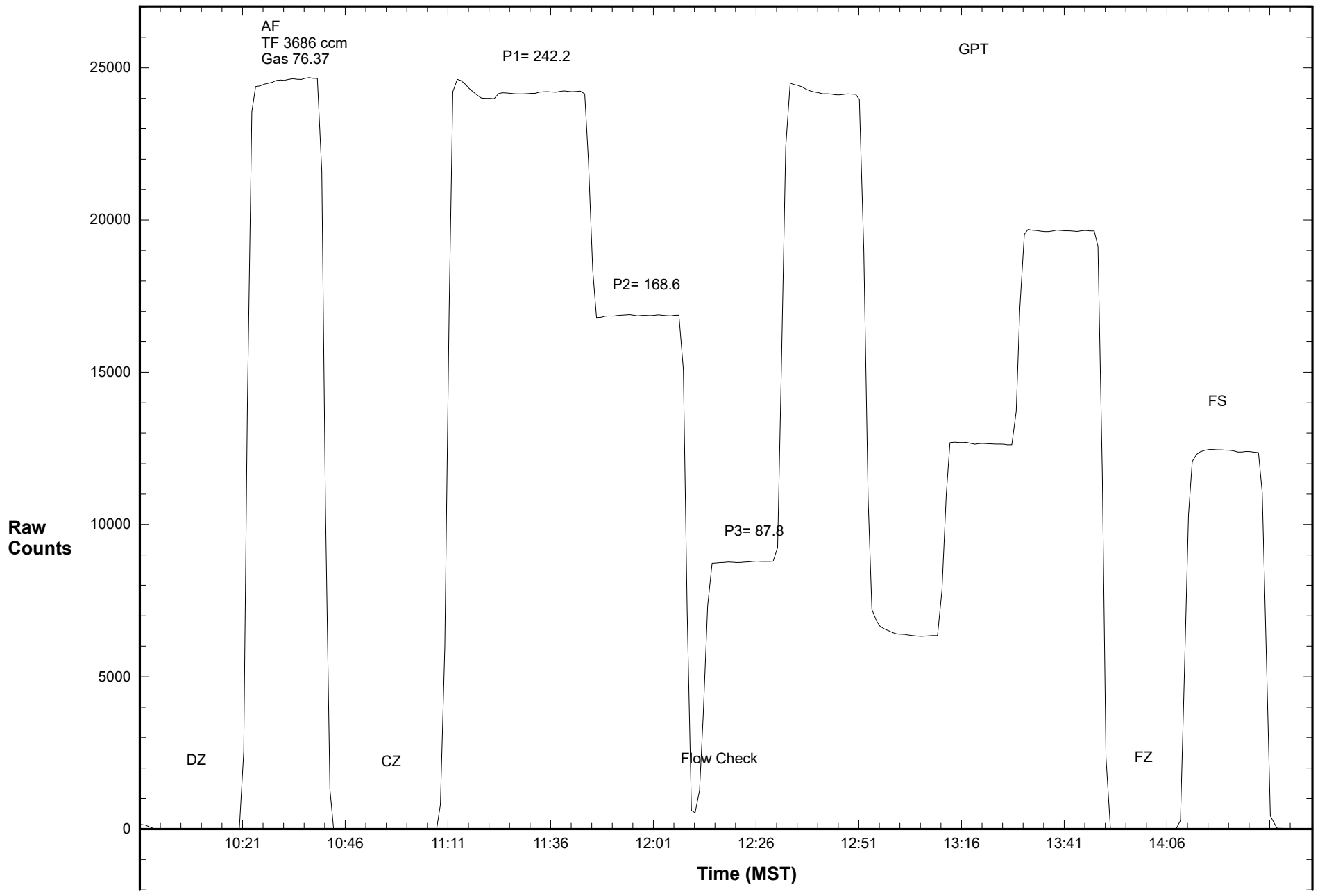
Station 907 NO2 June 26, 2017: Linear Regression



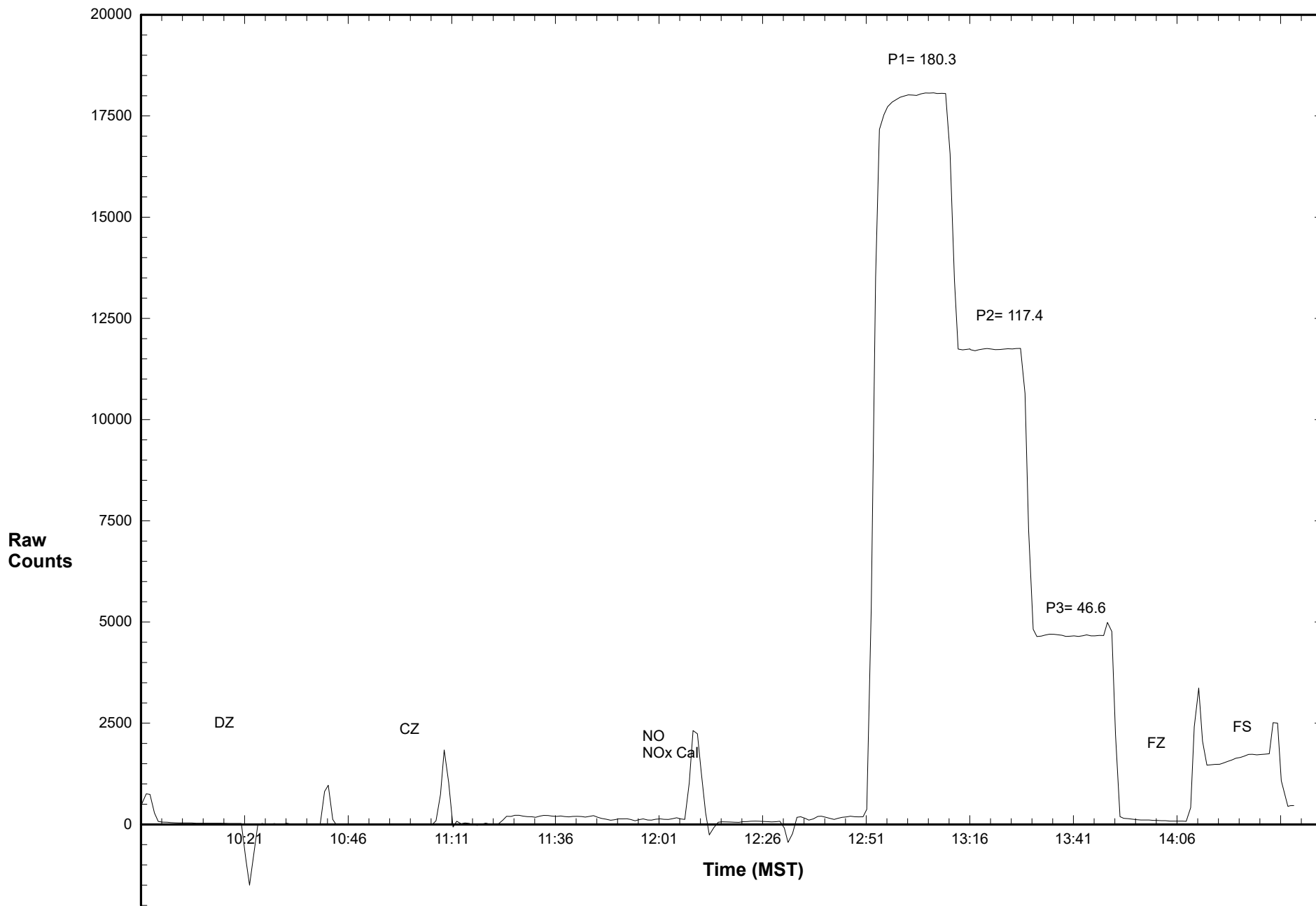
Station 907 NOX June 26, 2017: Linear Regression



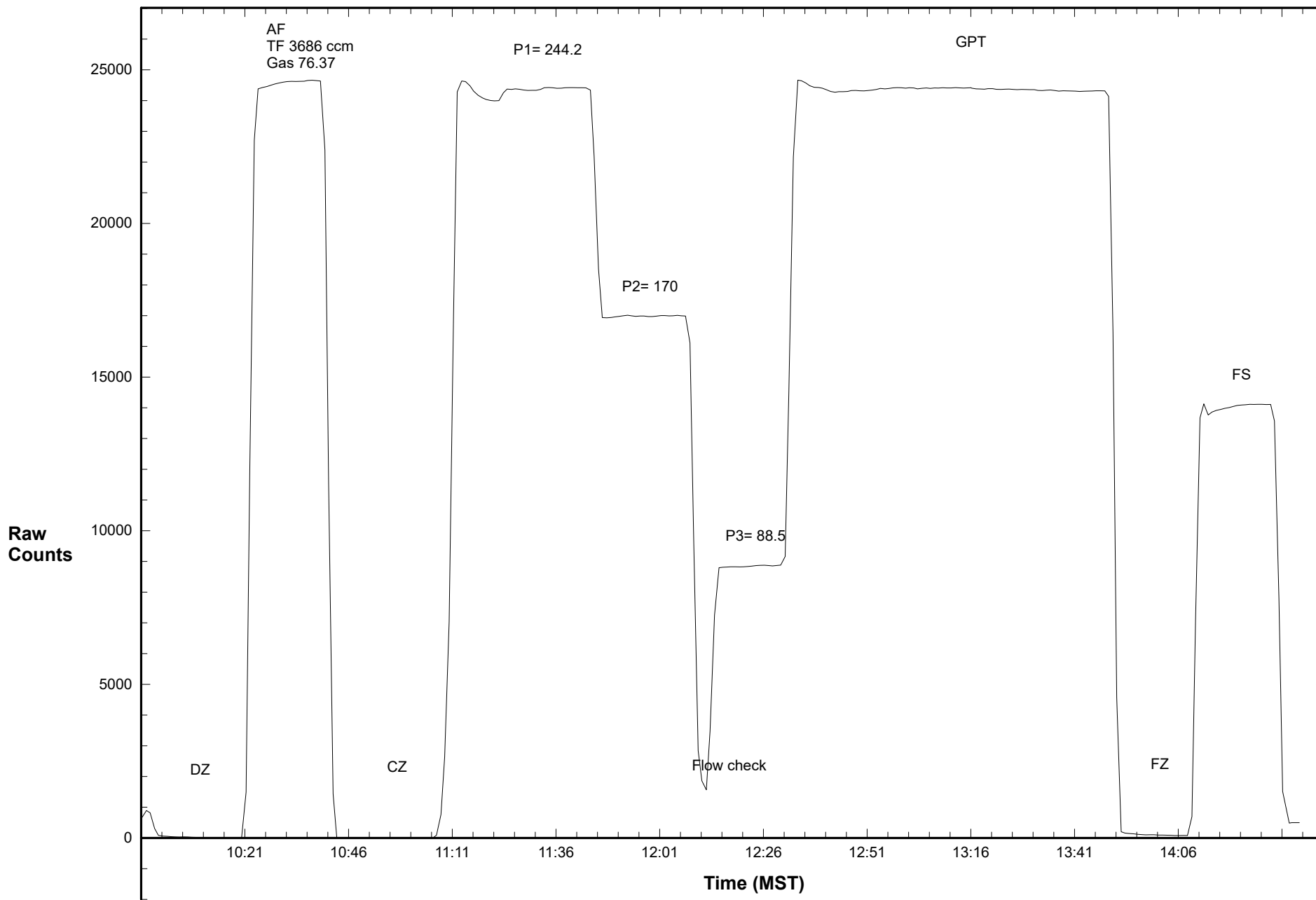
Station 907 NO June 26, 2017: Calibration Graph



Station 907 NO2 June 26, 2017: Calibration Graph



Station 907 NOX June 26, 2017: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 907, Power
 Calibration Date: June 26, 2017
 Parameter: SO₂

Instrument: Teco 43CTL	Serial Number: 333803284	Previous Calibration Date: May 26 2017
Calibration: Routine	Calibration Equipment: SABIO 2010 sn 04300810	Barometric Pressure: 27.00" Hg
Calibration Method: Std. Gas Dilution	Cylinder ID: FF27662	Temperature: 21.5° C
Cylinder Concentration: 5.92 ppm SO ₂	In Service: June 2 2016; exp Jan 20 2019	Technician: Dean Yustak

Instrument Settings	SO ₂ bkg ppb	SO ₂ Coefficient	Monitoring Range
Previous	4.12	0.803	200 ppb
Current	4.31	0.838	200 ppb

Final Zero: 0.2 ppb Final Span: 62.6 ppb As Found Correction Factor: 1.039

SO ₂ Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i
0.0753	3.635	120.1	17990.1	120.3	0.999
0.0519	3.653	82.9	12396.4	82.9	1.000
0.0267	3.650	42.9	6352.9	42.6	1.008
0.0000	3.610	0.0	11.6	0.2	

Results of Linear Regression			
R _c vs C _c	Slope	Intercept	R ²
Previous	150.019100	-8.979583	0.999996
Current	149.763400	-22.793180	0.999975
C _i vs C _c			
Current	1.000000	-0.000007	0.999975

Average Correction Factor: 1.002

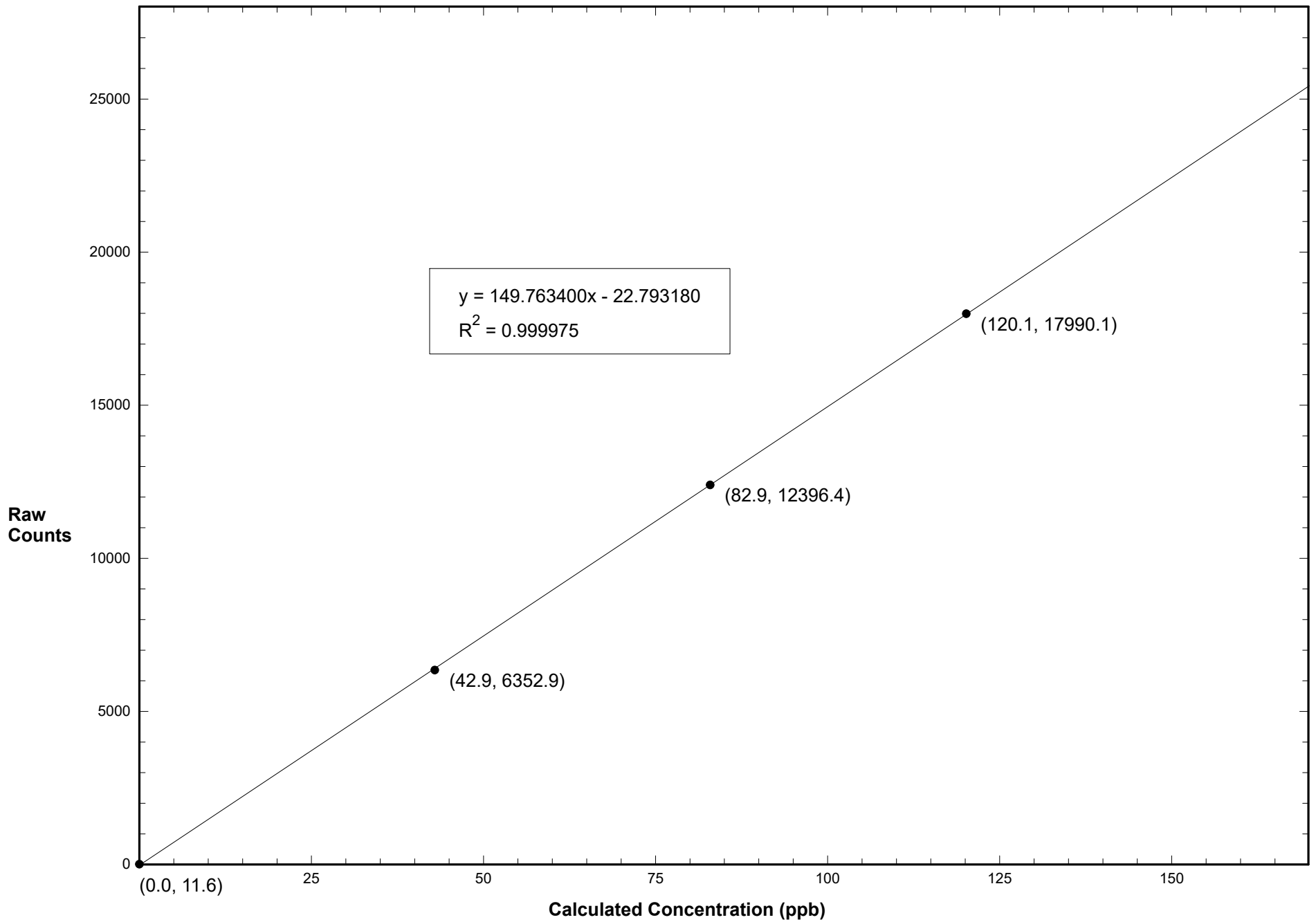
Previous Correction Factor: 0.999

Current Correction Factor: 0.999

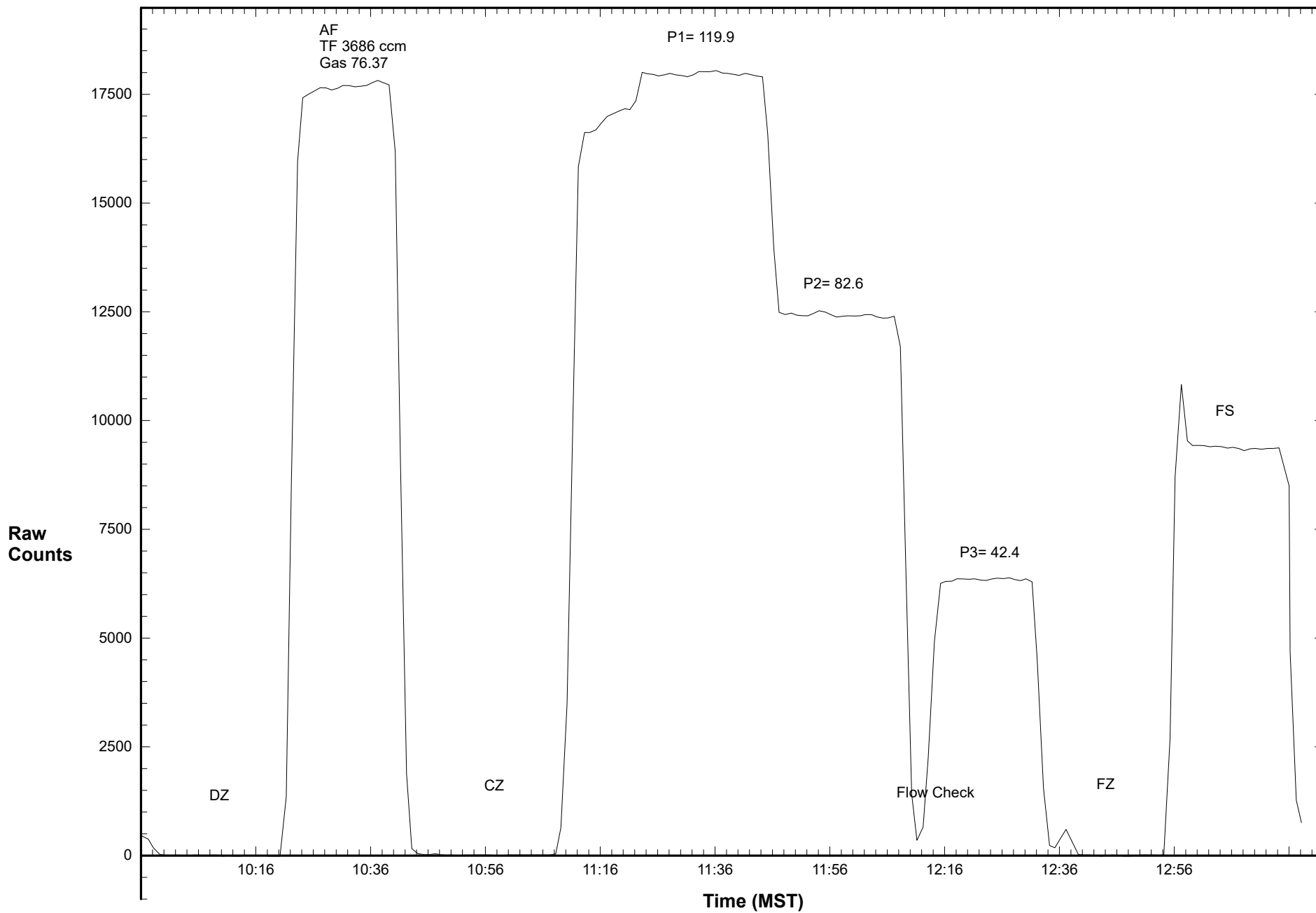
Percent Change of Correction Factor: 0.0

Comments:

Station 907 SO2 June 26, 2017: Linear Regression



Station 907 SO2 June 26, 2017: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
METEOROLOGICAL DATA**

**AMS 907
POWERS
JUNE 2017**

Operations and Data Collection by:
West Central Airshed Society
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:
West Central Airshed Society
Drayton Valley, Alberta



WCAS - Power
Summary of Hourly Averages

External Temperature (ET) - C
June 2017

Maximum Value: 28.21 C on Jun 26 16:00 Maximum Daily Average: 20.54 C on Jun 8																						Hours in Service: 720				
Minimum Value: 5.3 C on Jun 19 05:00 Minimum Daily Average: 10.94 C on Jun 22																						Hours of Data: 719				
Maximum Diurnal Average: 19.70 C at hour 16 Minimum Diurnal Average: 10.64 C at hour 5																						Hours of Missing Data: 1				
Monthly Average: 15.261 C Percentiles: P₁ = 7.2 P₁₀ = 9.7 Q₁ = 11.7 Median = 14.6 Q₃ = 18.7 P₉₀ = 22.3 P₉₉ = 25.8																						Hours of Calibration: 0				
																						Percent Operational Time: 99.9				
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	16.1	14.9	14.2	14.3	14.3	13.6	13.2	13.4	14.6	16.6	18.4	20.2	22.3	23.2	24.5	24.5	20.5	18.4	18.6	20.4	17.6	15.8	15.4	14.7	17.49	24.52
2-Jun	14.0	13.4	12.5	12.4	12.2	11.9	11.7	11.5	12.2	13.2	14.3	15.9	17.7	18.6	15.1	12.5	14.0	14.8	15.4	16.1	14.3	12.1	11.8	11.6	13.71	18.61
3-Jun	11.5	10.9	10.8	9.2	8.5	10.1	13.0	15.7	16.0	17.3	18.5	20.3	21.0	21.8	23.3	23.6	23.5	22.7	21.6	23.2	19.0	15.4	13.7	13.6	16.84	23.60
4-Jun	13.1	12.1	11.0	10.6	9.9	9.5	10.5	11.1	14.1	15.7	17.3	17.6	18.6	19.9	20.1	19.7	19.6	18.3	17.5	16.1	15.0	13.7	13.3	12.9	14.89	20.10
5-Jun	12.3	11.9	11.3	10.7	10.2	9.9	10.5	12.1	14.1	15.7	17.0	18.0	19.1	19.6	20.3	20.5	20.6	20.5	20.4	19.9	17.0	10.3	8.4	7.6	14.91	20.61
6-Jun	9.7	12.2	11.9	11.4	10.4	11.7	14.9	17.4	19.6	21.2	21.7	22.3	22.7	23.4	24.2	24.1	24.2	23.1	22.4	22.1	19.8	17.3	16.2	15.6	18.30	24.19
7-Jun	14.9	14.4	13.8	13.1	12.6	13.2	15.5	17.2	18.3	19.9	21.0	22.0	23.5	24.7	25.9	26.4	25.6	24.7	23.9	22.3	21.1	19.7	18.7	18.4	19.62	26.37
8-Jun	18.3	17.8	16.9	16.3	15.6	15.7	16.8	18.3	20.0	21.5	23.1	25.0	25.6	PF	24.8	24.3	24.0	24.1	23.7	23.1	22.4	21.4	17.7	16.0	20.54	25.63
9-Jun	15.0	14.0	13.3	13.3	13.3	13.3	13.3	13.9	14.3	14.4	13.3	13.1	11.8	11.0	10.6	10.1	9.3	9.1	8.6	8.4	8.5	8.5	8.2	7.8	11.51	14.98
10-Jun	8.1	10.4	11.6	10.7	10.2	10.0	9.8	9.7	10.1	11.1	13.3	14.4	15.7	16.4	17.5	18.3	18.6	19.2	19.6	17.8	13.2	12.6	12.2	12.1	13.45	19.65
11-Jun	12.2	12.0	11.4	11.4	10.3	9.1	8.7	8.0	8.2	8.9	9.8	10.5	11.2	11.8	12.3	13.1	13.4	13.3	12.9	12.3	11.9	11.2	10.9	10.7	11.07	13.44
12-Jun	10.4	9.5	9.1	9.5	9.6	10.3	12.3	14.0	16.1	17.7	19.1	20.4	21.5	22.5	23.3	24.2	23.7	21.8	19.9	22.9	19.4	16.9	16.7	15.2	16.91	24.17
13-Jun	15.0	14.3	13.4	12.8	11.9	11.6	11.4	14.4	15.2	15.3	16.5	16.5	16.8	15.6	14.5	15.1	16.5	18.3	19.3	16.7	15.7	14.4	13.6	13.4	14.93	19.33
14-Jun	13.2	12.9	11.7	11.7	11.6	11.7	12.0	12.9	13.2	13.3	13.2	13.3	13.2	13.3	13.2	13.2	12.7	12.4	12.3	12.4	12.1	12.2	12.1	11.9	12.56	13.34
15-Jun	11.4	10.6	9.4	8.6	7.8	8.6	10.1	11.9	13.4	14.6	15.6	16.5	17.4	18.8	18.7	19.7	20.3	20.1	20.1	17.1	15.4	14.2	13.3	12.6	14.42	20.26
16-Jun	12.1	11.3	11.5	11.8	11.6	11.7	12.8	13.5	14.2	15.3	16.5	17.2	17.6	18.1	18.9	19.5	19.8	11.7	11.7	11.5	11.4	11.2	11.2	10.6	13.87	19.81
17-Jun	10.1	9.6	9.3	9.0	8.4	9.2	10.9	12.5	14.2	15.3	16.2	16.9	17.7	18.1	18.8	19.2	20.3	20.3	19.9	17.8	14.3	12.8	11.7	11.8	14.33	20.32
18-Jun	11.2	11.5	11.7	10.0	9.1	9.7	11.1	12.7	14.7	15.8	16.9	18.1	15.3	13.4	17.5	19.2	19.8	19.7	18.4	18.1	14.7	12.9	11.0	8.1	14.19	19.79
19-Jun	6.0	5.8	6.6	6.4	5.3	7.2	11.2	14.2	15.0	16.4	17.2	18.0	19.3	20.1	20.7	20.3	20.8	20.5	19.2	18.1	16.8	16.3	15.9	15.8	14.71	20.84
20-Jun	15.4	14.9	14.1	12.9	12.4	12.7	13.4	14.7	16.8	17.7	19.6	20.3	21.1	22.2	23.2	21.0	18.4	10.3	10.0	10.5	10.3	9.9	9.7	9.8	15.05	23.18
21-Jun	9.4	8.8	9.0	8.4	7.7	8.6	10.1	11.3	12.8	14.1	14.9	15.8	16.5	16.9	16.2	15.4	15.9	16.2	14.6	13.3	11.7	10.3	10.1	9.3	12.39	16.92
22-Jun	7.9	7.4	7.0	7.1	7.4	7.8	8.4	8.9	9.0	9.6	10.8	12.5	13.7	14.6	15.0	15.0	15.3	16.1	16.1	15.6	13.9	8.7	7.7	7.2	10.94	16.07
23-Jun	7.7	8.3	8.2	7.7	8.1	8.6	10.8	12.4	14.6	16.1	17.0	17.8	18.7	17.5	19.5	19.4	19.8	19.0	19.8	19.1	15.1	11.6	10.7	11.3	14.12	19.76
24-Jun	10.5	10.9	10.2	9.9	9.8	10.3	11.3	14.0	16.4	17.5	18.1	19.0	19.9	20.7	20.8	21.9	22.8	23.1	23.5	22.4	18.7	15.1	12.9	12.5	16.35	23.53
25-Jun	12.1	11.4	11.1	11.1	11.3	11.8	14.8	16.9	19.1	20.4	21.4	22.7	23.7	24.2	24.6	25.3	25.6	24.0	22.4	21.7	20.8	19.5	18.4	17.8	18.84	25.60
26-Jun	16.5	16.1	16.0	15.9	15.4	15.0	15.2	16.4	17.9	20.1	21.2	23.0	24.0	25.5	27.4	28.2	27.3	25.9	26.1	22.0	20.2	15.6	14.0	13.3	19.92	28.21
27-Jun	13.0	13.1	12.3	11.9	11.0	10.2	11.3	12.5	12.7	10.2	10.9	13.6	15.9	17.2	15.3	16.2	13.1	14.6	14.7	13.5	12.9	12.6	11.5	11.8	13.00	17.21
28-Jun	11.5	11.8	12.0	12.0	11.1	10.9	11.2	11.3	12.0	10.4	10.9	11.7	12.2	13.0	14.4	14.1	14.8	14.6	15.0	14.4	13.2	12.7	12.7	12.2	12.50	14.96
29-Jun	11.0	9.2	7.8	7.5	7.5	9.8	12.2	14.0	15.9	17.1	18.1	19.1	20.1	21.2	21.9	22.3	22.7	22.8	22.7	20.7	18.3	17.0	17.3	17.5	16.41	22.81
30-Jun	17.6	17.0	16.3	16.0	14.7	14.7	16.0	18.9	20.0	21.1	21.7	22.1	22.5	23.4	24.2	24.7	25.1	25.2	25.4	25.2	22.8	18.7	17.9	16.1	20.31	25.40
12.24 11.94 11.52 11.11 10.64 10.95 12.14 13.53 14.81 15.78 16.79 17.80 18.56 18.86 19.55 19.70 19.60 18.83 18.52 17.82 15.91 14.02 13.15 12.65																								Diurnal Average		
18.26 17.76 16.93 16.32 15.63 15.73 16.78 18.92 20.00 21.46 23.12 24.99 25.63 25.52 27.37 28.21 27.25 25.89 26.09 25.23 22.81 21.35 18.74 18.44																								Diurnal Maximum		
PF - Power Failure																										



WCAS - Power

Summary of Hourly Averages

Wind Speed (WS) - kph
June 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	5.4	7.8	8.9	9.8	13.1	5.7	4.4	9.7	7.1	0.9	1.6	3.3	2.6	2.9	5.5	6.9	14.6	4.5	2.6	2.7	5.9	5.1	19.1	16.7	4.42	19.14
Dir	NNE	W	WNW	NW	WNW	W	NW	NW	WNW	NW	NNW	SW	SSW	SSW	SE	NE	N	E	WSW	N	N	NW	WNW	W	NW	NNW
2 Spd	9.7	15.0	16.1	15.6	7.6	5.4	8.2	10.9	9.3	10.7	11.1	12.9	15.0	12.6	14.0	10.6	8.4	13.0	12.1	11.1	9.6	10.6	10.8	12.1	9.46	16.13
Dir	WSW	W	W	WNW	W	WSW	NW	NNW	NW	WNW	WNW	NW	NNW	N	NW	NNW	NNW	WNW	WNW	WNW	WSW	WSW	WSW	WSW	WNW	W
3 Spd	11.0	10.1	9.2	5.5	6.3	7.1	3.8	4.9	6.0	8.2	13.8	18.2	19.0	20.9	17.4	16.1	9.9	9.9	2.7	2.9	1.7	3.6	0.5	18.3	5.81	20.90
Dir	WSW	WSW	WSW	SW	SW	SW	S	SSW	S	SSE	SE	SE	SE	SSE	SSE	SSE	SSE	SE	ESE	NE	E	ESE	W	NW	S	SSE
4 Spd	17.2	14.9	12.3	12.7	9.5	9.1	10.6	13.1	17.6	19.4	17.4	16.2	15.3	14.7	14.8	16.9	19.8	12.4	9.9	10.2	19.4	19.5	11.0	6.3	12.58	19.79
Dir	NNW	N	N	N	NNW	NW	NNW	NW	NNW	N	N	N	N	NNE	N	N	N	NNW	NNW	WNW	WNW	WNW	WNW	WNW	NNW	NNW
5 Spd	10.5	5.7	8.3	8.8	8.4	11.0	10.4	13.5	18.4	15.1	14.4	14.9	18.3	21.2	19.1	15.7	14.6	14.2	10.9	5.0	2.6	3.9	4.0	4.7	10.14	21.15
Dir	N	NNW	NW	NW	WNW	WNW	WNW	NW	NW	NNW	NNW	NW	NW	NW	NW	NW	WNW	WNW	NW	WNW	SW	SSW	SSW	SSW	NW	NW
6 Spd	7.6	11.5	11.6	9.6	8.6	10.3	12.5	11.6	12.0	12.8	16.8	18.0	18.3	16.4	16.9	16.6	14.1	15.4	11.3	8.6	9.6	11.3	15.9	14.8	11.81	18.26
Dir	SSW	SSW	SSW	SSW	SSW	S	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SSE	SSE	SSE	SE	SE	ESE	ESE	SE	SSE	SSE	SSE	SSE
7 Spd	15.1	13.5	13.5	15.0	16.6	15.0	12.7	14.0	10.5	11.5	12.5	13.7	17.3	19.7	16.7	15.5	13.3	13.4	13.9	11.4	11.3	12.2	13.3	17.2	13.79	19.71
Dir	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	SE	ESE	ESE	ESE	SE	SE	SSE	SSE	SE	SE	SE	SE	SE	ESE	SE	SE	SE	SE
8 Spd	17.1	20.0	19.2	21.7	20.7	19.3	21.5	20.3	21.9	22.1	22.8	24.8	25.6	PF	20.0	17.0	14.2	13.3	12.8	13.5	13.5	8.2	11.3	3.6	16.55	25.64
Dir	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E	ESE	E	SE	SW	SSE	SE	SE
9 Spd	6.7	1.9	3.8	2.2	6.9	12.1	9.0	7.9	7.3	4.3	13.7	14.8	21.1	21.7	25.6	23.4	23.5	23.3	18.5	19.5	17.6	18.1	21.0	17.7	13.36	25.56
Dir	SSW	SE	WNW	NE	SW	WSW	WSW	WNW	NW	WNW	W	W	W	W	W	W	W	W	W	W	W	W	WNW	W	W	W
10 Spd	10.2	9.4	17.9	15.5	15.9	19.4	18.5	21.3	18.9	18.7	18.9	18.6	17.1	15.5	12.9	9.8	7.6	6.1	3.1	2.7	3.2	6.9	8.5	6.7	10.53	21.32
Dir	W	N	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	NNE	NNE	NNE	NE	NE	NNE	SSW	SW	W	WNW	W	N	N
11 Spd	5.1	6.1	5.9	11.0	16.8	14.4	12.9	14.5	11.5	8.0	6.2	7.2	3.2	5.2	6.6	4.9	4.3	5.8	5.8	4.5	0.1	1.1	2.7	4.3	5.58	16.76
Dir	WNW	WNW	W	N	N	N	N	N	N	NNW	NNW	NW	WNW	WNW	NNW	NNW	NNW	NNE	NNE	N	S	SE	SSE	SE	NNW	N
12 Spd	6.4	7.7	8.9	10.3	10.3	12.2	10.9	11.3	15.3	17.7	15.3	12.0	13.5	11.8	11.4	10.5	9.0	5.4	8.6	3.2	7.5	3.9	5.7	5.1	6.87	17.65
Dir	SE	SSE	SSE	SSE	SSE	S	S	SSW	S	S	S	S	S	S	SE	SSE	S	S	WNW	N	N	NW	N	NNE	S	S
13 Spd	12.5	12.8	10.7	9.9	5.4	3.3	12.4	14.4	14.1	11.7	8.6	11.5	9.5	2.1	3.5	3.9	2.3	3.0	5.3	4.3	3.2	7.3	7.2	7.6	4.35	14.38
Dir	NNW	NNE	NNE	N	WNW	NNW	NNW	N	N	N	N	N	N	SW	S	W	W	WSW	SE	SSW	SSW	SSE	SW	WSW	NNW	N
14 Spd	5.7	2.5	7.7	4.3	2.6	7.2	6.1	6.5	8.5	9.1	9.2	10.4	10.8	9.9	10.9	12.1	12.9	7.4	6.9	8.6	10.6	13.1	14.2	13.1	7.20	14.16
Dir	WSW	SW	SSE	SW	SSW	W	WNW	NW	N	NNW	NNW	NW	NNW	NNW	NW	NW	NNW	NW	WNW	NW	NW	NW	NW	NW	NW	NW
15 Spd	11.6	12.0	10.4	10.5	10.0	11.0	11.9	15.1	16.6	15.5	15.0	11.9	9.8	6.3	3.9	3.5	2.8	5.8	8.3	7.8	10.7	9.1	11.8	12.4	3.78	16.60
Dir	NW	WNW	WNW	WNW	W	WNW	WNW	NW	NW	NW	NW	NNW	NW	N	NE	NE	SE	ESE	SE	ESE	ESE	ESE	SE	SE	NW	NW
16 Spd	13.4	13.0	13.8	10.9	7.0	5.0	8.2	11.5	11.9	18.0	18.1	17.4	15.9	13.8	8.2	4.8	2.7	19.9	5.6	2.9	5.7	9.4	8.8	9.4	3.93	19.95
Dir	SSE	SSE	SSE	SSE	S	SSW	WSW	WNW	NW	NW	NNW	NNW	NNW	N	N	NNE	N	WSW	W	WNW	SW	WSW	WSW	W	WNW	WSW
17 Spd	9.6	8.2	10.4	11.3	11.9	12.6	16.5	17.8	20.6	23.0	19.5	19.4	18.5	17.6	15.8	9.0	4.5	4.6	5.6	6.3	5.0	5.7	9.1	8.4	8.50	23.01
Dir	WNW	WNW	W	W	W	WNW	WNW	WNW	NW	WNW	NW	WNW	NW	NW	NW	W	NW	ENE	ESE	ESE	SE	SE	SSE	S	WNW	WNW
18 Spd	8.3	8.4	7.4	8.6	8.5	2.0	5.8	6.1	5.3	9.6	11.0	9.6	16.1	4.4	7.3	3.2	4.9	3.8	4.0	5.1	12.3	10.5	5.0	0.7	1.97	16.06
Dir	S	SSW	WSW	WNW	NW	NNW	NW	W	WSW	WSW	WSW	SW	NW	E	SE	SSE	SE	ESE	NE	NNE	NNE	NNE	NNE	WNW	WNW	NW
19 Spd	2.9	6.0	6.2	4.3	1.8	2.1	1.7	3.7	4.6	5.5	4.1	2.6	2.6	8.9	5.8	8.2	10.4	10.4	11.1	8.8	9.6	8.6	13.1	14.0	5.03	14.01
Dir	SSW	WSW	WSW	WSW	WSW	SW	WSW	ENE	SE	SE	S	SW	ESE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SE
20 Spd	16.4	18.7	17.0	17.9	14.6	12.1	10.1	9.2	14.7	11.9	11.6	7.6	5.7	4.9	8.1	5.8	7.0	32.3	12.4	9.3	10.5	11.0	11.8	13.9	2.17	32.32
Dir	SE	SE	SE	SE	SSE	SSE	S	WSW	NW	NNW	N	NNW	NNW	NNE	NNE	ESE	W	NW	NNW	W	W	W	W	W	W	W
21 Spd	15.5	15.5	19.3	16.5	16.4	17.0	17.0	17.7	21.7	27.4	27.8	28.9	28.4	30.1	28.4	25.5	28.2	31.6	26.2	27.1	24.2	27.7	26.1	24.4	22.90	31.63
Dir	W	W	WNW	WNW	W	W	WNW	WNW	WNW	NW	NW	WNW	NW	NW	NW	NW	NW	NW	NNW	NW	NW	NW	NW	NW	NW	NW
22 Spd	22.6	22.7	22.8	23.4	21.6	21.4	25.1	28.6	27.3	23.6	24.4	24.9	24.1	22.8	23.2	20.6	20.0	21.7	16.5	11.7	4.7	2.0	3.3	4.2	18.24	28.56
Dir	NW	WNW	WNW	NW	NW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	N	N	N	SSW	SW	SSW	NW	NNW



WCAS - Power
Summary of Hourly Averages

Wind Speed (WS) - kph
June 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	5.2	9.0	9.6	8.8	7.1	10.1	11.7	16.3	14.8	16.0	15.2	16.3	13.3	13.2	11.1	10.7	10.9	8.3	5.1	3.7	2.9	2.8	3.9	3.6	7.64	16.34	
Dir	SW	WSW	WSW	W	W	W	W	WNW	NW	NW	NNW	NNW	N	WNW	NNW	NW	NW	NW	NW	N	WSW	S	WSW	W	WNW	WNW	
24 Spd	4.0	5.1	6.4	7.3	8.9	6.5	7.9	9.6	10.3	9.4	10.0	6.8	6.9	11.4	15.0	8.9	5.0	5.2	5.2	3.7	3.8	5.2	7.6	9.1	4.01	14.97	
Dir	NW	W	W	W	WNW	WNW	WNW	WNW	NNW	NNW	NW	WNW	NW	NW	N	NE	N	N	NNE	ENE	E	ESE	SSE	SE	NW	N	
25 Spd	10.8	9.0	9.9	12.1	10.9	11.0	10.0	10.6	14.6	16.9	18.7	20.9	19.8	19.5	21.1	20.7	20.7	20.4	17.4	19.5	20.3	19.2	20.6	24.0	16.46	24.01	
Dir	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SSE	SE	SE	SSE	SSE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	
26 Spd	23.8	25.1	24.8	25.4	25.1	24.5	19.8	14.6	11.2	11.7	10.8	2.8	1.1	2.9	2.0	4.2	5.3	4.9	6.7	3.4	5.8	32.1	21.2	15.5	5.86	32.06	
Dir	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	E	NNW	NE	E	NNE	NE	E	ENE	NNW	NNE	NNW	N	NNW	SSE	NNW		
27 Spd	18.9	20.9	19.0	21.7	16.3	12.7	18.3	26.0	27.4	24.8	12.8	21.2	24.8	24.0	14.8	9.6	17.5	18.8	24.1	23.2	19.3	14.6	11.2	13.1	18.00	27.45	
Dir	NW	NW	NW	WNW	WNW	W	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	W	NW	WNW	W	W	W	WSW	WSW	WNW	NW	
28 Spd	11.4	10.7	14.8	24.0	24.0	23.5	22.6	20.4	25.5	24.0	24.1	21.1	21.6	21.1	18.5	17.1	16.3	14.0	9.9	8.5	6.7	6.6	4.2	3.5	13.21	25.53	
Dir	WSW	WSW	W	W	W	WSW	W	W	WNW	WNW	NW	NNW	NNW	NNW	N	NNW	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	WNW	
29 Spd	2.9	1.8	2.8	4.8	5.4	8.0	11.6	12.0	13.8	12.7	11.3	11.5	10.5	9.3	9.2	11.4	10.3	11.1	6.6	6.4	7.4	7.7	8.8	11.5	7.56	13.82	
Dir	NW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	WNW	WNW	W	WSW	SSW	S	SSW	SW	SW	WSW	WSW	
30 Spd	9.4	8.9	8.0	5.1	3.2	5.3	10.3	13.1	13.4	14.0	15.6	17.4	19.9	18.1	20.1	17.1	14.7	13.0	8.8	5.1	3.5	7.2	9.7	10.9	7.35	20.08	
Dir	WSW	WNW	W	WNW	S	SW	WSW	W	WNW	NW	NW	NW	NW	NW	NW	NNW	NW	NNW	N	N	N	NE	E	ESE	SE	NW	NNW
Spd	3.26	3.54	4.18	3.88	4.01	4.55	5.15	6.67	6.96	6.46	5.54	5.77	6.04	5.45	3.93	3.01	3.54	4.00	2.66	1.91	1.32	2.27	3.11	3.95	Diurnal Average		
Dir	WSW	WSW	WSW	W	WSW	WSW	W	WNW	NW	NW	NW	NW	NW	NW	NNW	NW	NW	NW	NNW	NW	W	W	WSW	WSW	Diurnal Maximum		
Spd	23.81	25.11	24.80	25.35	25.14	24.49	25.11	28.56	27.45	27.38	27.80	28.90	28.43	30.10	28.41	25.50	28.20	32.32	26.22	27.12	24.25	32.06	26.13	24.43	Diurnal Maximum		
Dir	155.11	156.43	160.94	162.66	163.12	165.10	321.14	329.48	305.98	308.19	314.16	301.38	304.79	315.53	311.16	307.83	313.00	313.25	326.65	320.14	307.83	329.64	310.86	306.74	Diurnal Maximum		
Maximum Speed Value: 32.3 kph on Jun 20 18:00																				Minimum Speed Value: 0.1 kph on Jun 11 21:00				Hours in Service: 720			
Maximum Daily Speed Average: 22.90 kph on Jun 21																				Minimum Daily Speed Average: 1.97 kph on Jun 19				Hours of Data: 719			
Maximum Diurnal Speed Average: 6.96 kph at hour 9																				Minimum Diurnal Speed Average: 1.32 kph at hour 21				Hours of Missing Data: 1			
Monthly Average Velocity: 3.603 kph 293.46 deg										Speed Percentiles: P ₁ = 1.6 P ₁₀ = 3.9 Q ₁ = 7.0 Median = 11.1 Q ₃ = 16.5 P ₉₀ = 21.2 P ₉₉ = 28.3										Percent Operational Time: 99.9							
All monthly, daily, and diurnal averages have been calculated using vector methods																											
PF - Power Failure																											
Frequency Distribution																											
	Speed Range (kph)																										
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																				
North	15	29	57	7	0	0	108																				
NorthEast	12	9	0	0	0	0	21																				
East	9	6	5	0	0	0	20																				
SouthEast	11	38	58	30	0	0	137																				
South	15	25	17	5	0	0	62																				
SouthWest	17	28	13	0	0	0	58																				
West	13	63	40	21	0	0	137																				
NorthWest	12	52	56	47	9	0	176																				
Total	104	250	246	110	9	0	719																				



WCAS - Power
Summary of Hourly Averages

Relative Humidity (RH) - %
June 2017

Maximum Value: 99.05 % on Jun 29 05:00 Maximum Daily Average: 93.51 % on Jun 9 Minimum Value: 23.5 % on Jun 5 18:00 Minimum Daily Average: 46.13 % on Jun 6 Maximum Diurnal Average: 81.77 % at hour 5 Minimum Diurnal Average: 49.90 % at hour 16 Monthly Average: 66.236 % Percentiles: P ₁ = 29.4 P ₁₀ = 40.7 Q ₁ = 49.6 Median = 66.6 Q ₃ = 82.8 P ₉₀ = 92.3 P ₉₉ = 97.0																								Hours in Service: 720 Hours of Data: 719 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9		
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	72.7	83.0	88.9	88.5	82.1	85.9	90.7	90.9	87.1	76.6	66.4	58.7	52.3	50.5	46.3	41.1	53.8	65.5	68.6	65.8	71.7	81.8	74.0	75.4	71.60	90.93
2-Jun	82.9	86.4	92.9	93.0	93.4	96.4	96.1	96.1	93.2	89.3	82.3	73.1	63.0	59.3	63.6	76.7	72.8	65.8	60.2	56.1	66.2	79.1	78.7	76.3	78.88	96.41
3-Jun	73.8	74.1	69.0	73.6	77.4	76.4	66.1	63.0	58.6	55.3	46.5	44.0	41.3	37.2	35.3	34.0	36.0	41.1	51.2	48.5	64.9	74.5	79.3	70.2	57.98	79.29
4-Jun	68.0	73.0	76.2	73.9	76.1	78.7	74.5	70.9	57.1	50.9	47.0	49.1	48.3	45.6	45.6	46.3	45.4	49.1	51.0	58.4	60.8	66.4	65.0	69.9	60.30	78.71
5-Jun	75.4	75.8	77.6	81.6	85.1	85.2	82.9	76.6	66.6	59.0	53.6	47.4	40.1	34.1	29.4	26.4	25.1	23.5	23.7	27.6	48.5	68.8	72.6	74.0	56.69	85.18
6-Jun	60.2	55.5	58.1	57.3	62.1	59.6	53.7	50.7	46.7	43.1	36.4	32.9	32.0	32.1	30.9	31.0	33.7	36.7	40.1	42.9	47.4	52.7	55.4	55.7	46.13	62.11
7-Jun	57.5	58.9	61.0	65.4	69.2	68.0	60.8	55.1	52.4	49.5	46.9	46.7	45.2	42.1	41.4	39.0	41.1	42.7	41.7	44.0	44.2	47.5	50.5	49.6	50.84	69.19
8-Jun	48.8	49.2	50.1	50.8	52.2	53.1	52.4	50.1	46.9	44.8	41.3	37.6	35.3	PF	38.6	40.9	41.0	40.3	40.8	40.8	39.1	43.2	67.4	78.2	47.09	78.22
9-Jun	85.0	89.2	93.2	94.5	94.8	95.7	96.3	93.9	92.3	92.3	94.6	93.2	93.2	94.6	94.5	94.9	94.2	93.0	93.0	93.4	93.5	93.8	94.6	96.5	93.51	96.49
10-Jun	97.3	98.2	94.8	92.1	88.8	86.7	86.5	85.1	85.0	82.0	71.2	60.9	53.5	50.3	48.3	45.7	44.0	41.7	40.8	52.0	78.6	72.9	70.2	71.8	70.76	98.25
11-Jun	72.0	74.8	79.9	79.3	85.5	93.4	95.6	96.3	92.4	88.0	82.4	77.3	75.4	72.6	71.0	67.2	68.2	70.2	74.2	79.0	84.0	90.3	93.3	92.1	81.44	96.33
12-Jun	91.2	91.9	93.3	91.6	92.8	93.6	88.1	81.5	72.8	64.9	61.9	60.8	57.7	54.4	51.7	47.1	46.1	55.3	49.8	46.8	58.8	73.4	69.4	77.9	69.71	93.63
13-Jun	84.9	84.0	79.6	77.8	83.5	85.2	86.5	65.9	58.7	60.7	59.8	58.5	55.9	72.0	81.3	81.6	70.3	60.3	62.9	80.3	85.1	91.8	93.0	88.2	75.33	92.98
14-Jun	85.2	87.4	92.2	90.3	92.8	92.2	88.3	88.0	81.3	84.4	87.3	88.5	90.4	90.9	90.2	88.5	90.0	90.9	93.4	95.5	94.8	95.3	95.2	94.0	90.28	95.50
15-Jun	93.6	94.4	96.0	96.1	96.7	94.5	89.1	80.6	72.4	66.7	60.3	53.8	49.6	46.5	46.2	43.0	41.2	40.5	41.5	52.2	67.5	76.1	81.2	84.9	69.35	96.72
16-Jun	87.6	90.0	90.7	90.3	90.2	90.8	87.9	80.8	74.8	69.3	66.3	62.1	58.1	56.8	54.0	52.9	52.0	80.9	81.3	89.5	90.7	89.5	89.4	88.5	77.68	90.85
17-Jun	85.4	83.0	78.9	77.4	77.7	70.3	61.3	54.7	47.2	40.0	39.6	37.1	33.2	29.6	27.9	31.2	28.9	30.1	30.9	38.1	63.4	67.7	68.1	62.7	52.68	85.40
18-Jun	62.5	59.6	62.5	73.0	79.8	77.6	75.7	63.6	53.1	45.8	44.4	35.9	47.4	66.2	49.2	40.8	40.9	42.3	47.4	50.3	51.1	59.1	63.2	78.7	57.08	79.78
19-Jun	87.7	86.7	80.8	81.3	86.0	83.8	69.9	55.3	51.3	48.6	45.1	40.8	39.7	38.8	37.0	39.2	38.7	42.0	47.8	54.2	58.8	59.4	61.4	61.3	58.16	87.70
20-Jun	62.0	66.8	69.7	71.7	73.2	72.3	71.8	70.8	68.1	67.2	59.5	56.0	51.0	47.9	45.1	52.1	63.9	94.4	94.0	92.2	89.8	89.9	88.9	87.1	71.05	94.43
21-Jun	83.2	76.2	65.5	63.0	65.9	60.3	56.9	54.2	49.2	41.1	38.1	35.2	33.2	33.3	34.0	36.9	33.3	33.6	41.8	44.8	53.3	62.3	64.6	72.7	51.36	83.20
22-Jun	87.5	91.0	92.5	92.7	91.2	88.7	81.0	70.0	66.6	63.7	58.7	52.3	45.5	42.1	41.0	42.2	42.2	38.7	40.6	43.5	52.9	82.1	86.0	88.9	65.90	92.67
23-Jun	82.0	82.1	79.5	83.1	87.3	84.0	75.5	71.1	64.9	60.0	56.1	50.2	45.7	50.7	43.4	40.7	37.7	39.9	39.8	46.2	70.3	80.7	82.8	76.4	63.75	87.30
24-Jun	79.4	74.1	77.8	80.7	85.2	83.3	79.7	69.7	59.7	54.8	51.9	49.5	45.8	40.7	44.8	42.0	37.8	36.6	35.8	40.7	54.0	64.9	73.5	71.8	59.75	85.25
25-Jun	74.1	76.6	78.5	80.8	81.6	82.1	71.3	63.5	56.8	56.6	52.9	47.8	45.3	42.3	41.7	40.7	40.3	44.4	49.2	51.4	52.8	56.4	60.4	60.9	58.68	82.10
26-Jun	67.2	68.3	65.3	62.2	62.1	64.0	65.9	64.8	63.6	60.7	59.8	55.8	54.8	51.0	43.3	42.4	46.3	50.6	49.0	62.2	74.9	81.8	90.2	93.4	62.49	93.37
27-Jun	91.7	82.0	79.4	75.8	71.9	75.8	69.4	63.8	63.9	77.4	80.7	65.6	56.8	52.4	66.7	64.5	80.3	69.8	61.3	65.7	70.2	73.2	82.5	79.9	71.70	91.70
28-Jun	82.8	80.0	76.6	77.1	85.8	87.1	84.1	86.9	83.9	93.7	95.3	94.3	91.9	90.4	85.3	85.1	83.3	80.1	79.3	83.5	92.9	93.3	93.9	96.2	86.77	96.17
29-Jun	97.4	98.1	98.6	98.9	99.0	98.8	96.9	91.3	79.8	74.7	71.5	65.8	58.9	52.2	47.7	46.7	45.3	44.1	47.3	57.8	68.7	71.6	70.8	69.3	72.96	99.05
30-Jun	65.5	67.9	73.1	74.0	83.4	81.9	78.0	64.5	62.0	56.6	51.3	48.3	43.5	42.5	38.2	36.5	36.3	36.3	36.8	40.5	48.0	58.3	58.9	71.6	56.42	83.44
78.15 78.60 79.07 79.58 81.77 81.52 77.76 72.32 66.95 63.93 60.30 55.97 52.80 52.39 50.45 49.90 50.33 52.67 53.84 58.13 66.57 73.26 75.82 77.13																								Diurnal Average		
97.43 98.25 98.58 98.89 99.05 98.78 96.85 96.33 93.18 93.72 95.28 94.28 93.20 94.60 94.52 94.87 94.21 94.43 93.97 95.50 94.76 95.27 95.23 96.49																								Diurnal Maximum		
PF - Power Failure																										



WCAS - Power
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
June 2017

Maximum Value: 19.24 kph on Jun 20 17:00		Maximum Daily Average: 6.05 kph on Jun 21		Hours in Service: 720																						
Minimum Value: 0.5 kph on Jun 22 23:00		Minimum Daily Average: 2.27 kph on Jun 19		Hours of Data: 719																						
Maximum Diurnal Average: 4.55 kph at hour 13		Minimum Diurnal Average: 2.44 kph at hour 24		Hours of Missing Data: 1																						
Monthly Average: 3.362 kph		Percentiles: P ₁ = 0.8 P ₁₀ = 1.4 Q ₁ = 2.1 Median = 3.1 Q ₃ = 4.3 P ₉₀ = 5.5 P ₉₉ = 8.6		Hours of Calibration: 0																						
				Percent Operational Time: 99.9																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	1.7	2.4	4.2	4.1	2.8	2.8	2.8	3.6	2.3	1.8	1.8	2.2	2.6	3.3	3.6	2.9	4.8	4.6	4.4	2.0	1.5	7.3	4.8	4.7	3.29	7.31
2-Jun	4.4	4.2	3.8	3.9	4.5	2.6	2.5	2.0	2.2	2.6	2.6	3.1	3.4	4.2	7.0	8.4	3.5	6.7	3.1	2.5	1.7	1.0	1.0	1.1	3.41	8.43
3-Jun	1.4	1.6	1.6	1.3	1.6	1.6	1.1	2.4	2.0	2.5	2.9	4.0	4.2	5.3	5.4	4.3	3.5	2.4	2.5	0.9	1.0	1.8	3.2	3.5	2.58	5.41
4-Jun	3.5	3.1	1.8	1.9	2.2	1.6	1.6	2.2	3.7	3.8	4.7	3.9	3.6	3.8	3.9	3.5	4.0	3.0	2.2	4.0	3.9	4.4	2.4	2.6	3.14	4.73
5-Jun	2.8	2.1	2.1	1.6	2.2	2.1	2.0	3.8	3.5	3.6	4.3	4.6	5.3	5.6	5.0	5.0	3.9	4.4	3.1	1.5	0.8	0.8	0.8	0.9	2.99	5.58
6-Jun	1.2	1.8	1.8	2.0	1.8	1.8	1.2	2.1	2.5	3.4	4.0	4.8	5.6	4.8	5.2	4.2	4.3	3.3	3.5	1.8	1.3	1.9	2.2	2.2	2.86	5.57
7-Jun	2.1	2.3	2.4	2.0	1.9	2.3	2.4	3.1	2.5	3.2	3.7	4.7	4.6	5.3	4.7	4.4	3.4	2.8	2.4	2.3	1.9	2.2	3.1	3.1	3.05	5.31
8-Jun	3.2	3.4	3.7	3.9	3.5	3.1	4.2	4.2	4.9	4.7	5.0	6.1	5.6	PF	5.8	4.6	3.7	3.2	3.5	3.1	3.2	4.3	7.6	2.4	4.21	7.64
9-Jun	2.5	1.7	3.2	2.0	3.0	2.0	3.5	1.8	2.4	1.4	3.7	4.4	5.8	4.8	5.8	6.2	5.4	5.1	5.1	4.5	3.7	4.4	5.0	4.0	3.82	6.16
10-Jun	4.6	6.8	3.9	3.1	4.1	4.7	4.6	4.3	4.3	4.1	4.3	4.3	4.6	4.4	4.2	3.6	3.1	2.7	2.2	1.1	1.1	1.0	1.6	1.9	3.52	6.82
11-Jun	1.9	3.6	3.1	3.1	3.6	3.7	2.8	3.3	2.3	1.8	2.6	2.7	2.7	3.0	2.4	2.5	2.7	1.6	1.9	2.5	1.9	1.2	1.9	1.1	2.50	3.74
12-Jun	1.3	1.2	1.5	1.8	2.0	1.9	2.8	3.5	4.9	5.6	4.9	4.0	4.2	3.8	4.2	4.3	3.6	3.3	7.9	1.7	4.1	4.0	4.0	3.0	3.48	7.86
13-Jun	3.3	2.7	4.2	2.7	3.4	3.0	2.7	3.9	3.3	2.3	2.5	2.8	2.8	3.3	3.4	1.4	1.1	1.6	1.7	1.1	0.8	3.7	1.4	1.1	2.52	4.16
14-Jun	0.9	2.5	1.8	1.5	1.1	2.0	4.1	2.5	1.7	2.2	1.9	2.3	2.7	2.3	2.8	2.5	2.7	2.3	1.4	2.1	2.7	3.1	3.5	3.4	2.34	4.12
15-Jun	3.1	2.7	1.7	1.8	1.6	2.3	2.6	3.5	3.8	3.5	3.8	4.2	4.5	3.9	3.0	3.1	3.0	2.5	2.0	1.5	2.1	1.8	1.9	1.8	2.73	4.52
16-Jun	2.2	2.2	2.8	2.7	2.2	1.5	2.1	3.0	2.8	4.3	4.5	4.3	3.6	3.9	4.0	3.1	2.3	11.0	3.8	1.9	2.3	3.5	1.2	1.3	3.19	11.00
17-Jun	1.5	1.5	2.4	2.1	2.4	2.8	3.8	4.4	6.3	5.7	5.8	5.3	5.0	4.8	4.2	3.7	4.2	2.8	2.2	1.2	0.7	0.8	1.1	1.3	3.16	6.31
18-Jun	1.6	1.9	2.3	1.8	2.5	1.7	4.2	1.2	1.4	2.8	3.4	4.5	9.4	5.4	3.0	2.8	3.0	1.7	2.2	3.4	4.6	2.0	3.6	1.4	2.99	9.44
19-Jun	1.2	1.7	1.5	0.8	1.4	0.9	1.1	2.0	2.3	2.8	3.2	3.6	3.3	4.0	4.0	3.4	2.8	2.7	2.8	1.4	1.1	2.1	2.2	2.1	2.27	4.02
20-Jun	2.4	2.9	3.6	3.0	2.5	2.8	2.3	3.3	3.6	3.1	3.0	3.4	4.0	3.8	3.5	2.5	19.2	8.1	5.1	3.3	2.9	4.1	1.9	2.7	4.05	19.24
21-Jun	3.1	3.0	4.1	3.7	3.3	3.4	4.1	4.4	6.0	7.4	7.5	7.4	7.5	7.7	7.7	8.2	7.7	7.7	6.8	7.8	7.3	6.9	6.4	6.3	6.05	8.18
22-Jun	5.6	5.6	5.5	5.2	5.1	4.7	5.6	6.5	6.0	5.5	5.5	6.5	5.4	5.3	5.4	5.0	5.0	4.8	4.1	3.5	3.4	1.1	0.5	0.8	4.65	6.55
23-Jun	1.3	0.8	0.9	1.3	2.2	2.0	2.4	3.7	3.5	3.8	4.0	4.3	4.7	4.4	4.4	3.8	3.0	3.1	3.1	2.1	1.5	1.1	2.8	1.9	2.76	4.72
24-Jun	3.1	1.0	2.7	3.9	1.4	1.6	1.5	2.2	2.6	3.1	3.3	3.7	4.1	5.0	5.5	4.0	3.1	3.0	1.5	1.8	1.4	0.9	2.4	1.0	2.67	5.51
25-Jun	0.8	1.0	0.9	0.9	1.5	1.5	2.1	2.8	3.4	3.5	4.0	4.7	4.8	5.7	5.0	5.3	5.6	4.6	3.2	4.1	3.8	3.8	4.4	4.9	3.43	5.72
26-Jun	4.6	4.8	5.0	5.4	5.2	5.3	5.0	4.5	3.3	3.4	3.6	2.1	2.1	2.1	2.0	2.0	2.5	2.6	2.2	6.1	6.9	9.9	8.2	5.0	4.32	9.89
27-Jun	4.6	4.5	5.3	8.7	5.3	3.4	6.1	7.9	8.7	7.9	5.0	6.6	6.7	6.9	6.3	3.8	8.6	6.7	6.4	7.2	4.7	4.0	2.3	3.0	5.85	8.68
28-Jun	2.9	2.5	6.1	5.9	5.5	5.5	5.2	4.5	6.7	5.6	4.8	4.6	5.0	5.5	4.3	4.4	3.7	3.7	2.1	2.2	1.7	1.6	1.5	1.8	4.05	6.66
29-Jun	1.1	1.7	2.3	1.7	1.1	1.0	2.2	2.3	3.2	3.3	2.9	3.4	3.7	3.2	3.7	3.5	2.9	3.2	2.4	1.3	1.1	1.7	1.2	1.7	2.32	3.74
30-Jun	1.5	1.3	1.9	2.0	1.3	1.1	1.4	3.5	2.9	3.4	4.1	4.9	4.7	4.6	4.4	4.5	4.7	3.3	2.7	1.4	1.3	1.5	1.5	1.0	2.71	4.88
																								Diurnal Average		
																								Diurnal Maximum		
																								2.51 2.62 2.93 2.85 2.73 2.56 2.99 3.41 3.64 3.73 3.91 4.26 4.55 4.48 4.46 4.03 4.37 3.96 3.25 2.71 2.56 2.93 2.85 2.44		
																								5.60 6.82 6.10 8.68 5.48 5.49 6.06 7.91 8.65 7.86 7.50 7.44 9.44 7.70 7.73 8.43 19.24 11.00 7.86 7.79 7.32 9.89 8.23 6.30		
PF - Power Failure																										
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																										



WCAS - Power
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
June 2017

Maximum Value: 88.59 deg on Jun 1 10:00 Maximum Daily Average: 41.86 deg on Jun 1																								Hours in Service: 720		
Minimum Value: 2.5 deg on Jun 5 23:00 Minimum Daily Average: 11.38 deg on Jun 25																								Hours of Data: 719		
Maximum Diurnal Average: 30.29 deg at hour 13 Minimum Diurnal Average: 14.88 deg at hour 1																								Hours of Missing Data: 1		
Monthly Average: 21.711 deg Percentiles: P₁ = 5.9 P₁₀ = 9.9 Q₁ = 12.5 Median = 16.8 Q₃ = 23.8 P₉₀ = 42.3 P₉₉ = 81.1																								Hours of Calibration: 0		
Percent Operational Time: 99.9																										
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	19.1	47.0	42.7	16.1	20.5	20.5	38.0	31.5	15.5	88.6	76.5	63.7	75.2	73.8	47.3	28.4	19.2	51.2	51.9	79.8	17.6	56.0	12.3	12.3	41.86	88.59
2-Jun	30.2	22.4	14.2	16.3	51.2	33.9	29.6	10.7	14.9	14.9	17.3	17.2	18.9	22.7	48.0	19.4	18.7	16.9	16.2	14.1	11.5	6.4	6.1	5.9	19.91	51.21
3-Jun	7.1	8.2	9.3	12.5	11.5	11.5	30.6	29.3	21.3	20.1	13.9	16.3	14.2	15.1	18.1	17.2	20.5	13.2	31.3	14.5	24.1	28.9	87.7	11.2	20.32	87.69
4-Jun	14.2	13.8	12.0	14.7	25.2	18.1	11.7	12.0	16.1	20.1	20.8	21.4	20.0	20.4	22.1	18.8	21.4	13.9	16.1	19.9	10.5	11.8	21.5	32.5	17.87	32.45
5-Jun	24.7	26.8	18.5	10.9	13.6	11.3	11.6	13.9	13.5	17.3	25.1	21.4	21.4	18.0	17.4	23.0	23.6	17.1	14.0	19.9	24.2	3.5	2.5	5.5	16.60	26.78
6-Jun	9.2	9.2	8.1	11.8	14.2	10.1	6.7	11.4	12.3	17.5	17.1	17.8	19.7	20.3	16.9	16.0	19.4	16.0	13.6	11.9	9.3	8.3	7.8	9.2	13.08	20.33
7-Jun	8.9	8.5	9.5	7.3	7.2	8.5	11.0	11.5	18.8	20.4	21.4	19.7	19.4	19.4	17.2	19.2	12.2	10.7	9.5	10.1	9.4	10.3	11.5	10.5	13.00	21.39
8-Jun	10.9	9.5	10.0	9.4	9.2	10.7	9.6	12.0	11.8	12.2	12.9	14.3	14.8	PF	12.2	13.2	13.7	13.0	16.0	13.1	13.5	52.1	25.5	42.2	15.73	52.08
9-Jun	16.8	51.7	53.7	51.7	34.5	10.7	17.3	17.7	19.2	19.9	15.3	14.8	12.7	13.4	12.7	12.9	13.3	15.1	14.0	12.5	13.9	12.0	12.5	11.7	20.00	53.66
10-Jun	14.4	38.2	14.7	16.6	18.0	18.0	20.7	21.0	21.6	20.3	22.5	23.2	21.8	20.6	23.1	25.3	27.1	29.6	50.7	30.4	23.7	14.3	8.4	20.4	22.70	50.69
11-Jun	18.7	18.0	42.3	24.3	21.4	20.2	16.8	20.3	17.3	18.4	28.5	28.6	78.9	41.0	28.5	34.9	44.9	19.6	15.4	19.1	85.4	29.5	13.0	8.8	28.91	85.42
12-Jun	17.9	9.8	8.4	10.3	10.8	9.5	17.4	17.3	18.3	19.4	20.6	24.2	22.4	24.1	25.9	25.4	26.6	36.0	39.5	13.5	25.3	46.7	60.1	42.8	23.85	60.09
13-Jun	19.2	18.6	33.2	22.5	57.3	80.3	13.8	18.6	19.8	16.8	19.3	17.3	16.1	57.5	86.2	27.6	21.0	53.7	27.3	24.7	15.2	25.1	12.8	10.1	29.75	86.22
14-Jun	9.0	44.5	13.2	28.2	42.1	31.1	30.3	19.3	13.7	20.9	18.6	14.6	15.3	12.9	20.2	15.8	13.8	21.1	18.2	18.0	12.3	12.1	17.5	13.2	19.83	44.53
15-Jun	12.2	12.1	11.3	9.2	9.9	12.1	14.2	14.1	14.5	16.7	19.8	23.7	28.7	45.1	53.7	67.4	75.5	36.5	14.6	13.9	13.8	12.3	8.9	9.3	22.90	75.48
16-Jun	9.7	8.6	11.9	17.8	16.2	25.4	13.7	15.6	13.5	13.0	17.4	22.0	19.6	24.8	33.1	53.6	59.4	31.8	63.8	65.1	19.0	12.1	12.2	8.5	24.50	65.09
17-Jun	9.4	10.3	9.9	10.4	10.7	12.1	12.3	14.8	14.5	15.9	17.3	20.5	18.2	21.8	23.6	38.8	64.6	54.4	25.4	11.5	8.6	6.1	12.2	8.6	18.83	64.60
18-Jun	12.6	15.8	38.2	14.4	9.2	51.2	63.4	15.8	18.1	17.9	19.0	31.1	46.7	62.7	35.5	69.7	48.0	39.4	25.9	16.2	12.5	13.0	36.6	82.0	33.12	81.95
19-Jun	13.2	16.2	7.0	10.4	59.5	36.2	47.3	35.2	37.0	34.0	59.2	77.6	85.8	35.8	56.7	25.1	20.2	16.7	11.6	10.9	4.9	15.8	9.7	8.0	30.58	85.84
20-Jun	8.0	8.4	9.4	8.6	9.7	11.3	21.8	31.9	17.8	21.1	21.6	38.3	57.3	55.8	29.9	35.8	76.4	12.7	34.1	30.7	13.4	11.7	12.0	11.1	24.54	76.38
21-Jun	10.6	11.3	12.4	12.6	11.2	11.5	13.9	15.1	14.7	15.9	14.7	16.9	17.7	15.6	16.7	21.5	14.9	16.9	15.3	13.8	14.7	12.4	13.4	13.2	14.45	21.50
22-Jun	13.3	13.0	12.9	13.2	12.5	11.7	12.0	13.9	12.3	15.6	15.9	19.4	18.7	18.7	15.9	16.5	14.5	13.6	18.1	17.2	46.7	21.0	8.8	8.7	16.00	46.69
23-Jun	7.1	6.8	6.2	27.2	26.3	10.8	11.9	12.0	18.9	16.2	20.2	20.9	25.8	30.3	26.6	23.8	19.6	24.2	43.0	55.3	36.2	32.7	58.4	50.1	25.44	58.42
24-Jun	34.2	14.9	12.0	13.2	15.5	12.6	10.7	22.5	22.5	22.4	23.6	50.1	45.0	29.9	38.4	24.8	46.3	33.2	24.5	22.1	17.5	27.7	22.5	7.6	24.74	50.12
25-Jun	5.8	8.0	5.4	5.0	8.0	7.5	11.4	12.4	11.4	12.9	14.2	13.6	16.7	18.2	15.5	16.9	15.4	10.7	9.9	10.7	10.5	10.3	11.4	11.4	11.38	18.25
26-Jun	11.0	11.1	11.4	11.6	11.3	11.4	12.8	15.2	15.6	15.7	18.7	56.8	83.2	53.6	68.1	41.7	30.3	30.3	22.7	81.5	54.8	24.4	24.6	16.1	30.58	83.21
27-Jun	14.2	14.0	16.3	15.1	15.6	19.2	17.3	14.8	15.8	14.8	18.5	15.3	17.6	20.6	18.4	26.5	26.0	16.8	15.3	16.2	13.3	12.5	10.2	12.4	16.53	26.47
28-Jun	13.5	17.8	18.9	12.5	14.4	12.7	13.8	12.8	14.3	15.1	13.2	13.1	13.7	16.2	23.2	15.9	19.7	15.0	11.8	11.3	13.6	17.6	40.0	20.6	16.28	40.01
29-Jun	33.8	52.3	46.0	20.9	10.3	6.1	9.7	11.1	14.3	17.0	22.8	20.3	25.6	26.2	29.2	23.2	20.3	15.4	23.4	18.1	9.0	14.6	10.1	9.0	20.37	52.25
30-Jun	17.6	11.0	13.6	38.5	17.0	13.3	10.5	14.5	18.4	15.9	17.3	16.4	17.7	16.8	15.7	19.0	22.5	19.0	17.6	12.0	32.4	19.8	15.8	7.4	17.49	38.49
Diurnal Average																								Diurnal Average		
Diurnal Maximum																								Diurnal Maximum		
PF - Power Failure																										
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																										

WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
CONTINUOUS AIR MONITORING DATA**

**AMS 908
MEADOWS
JUNE 2017**

Operations and Data Collection by:
West Central Airshed Society
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:
West Central Airshed Society
Drayton Valley, Alberta

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

TransAlta / Meadows Station 908													June 2017		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)	
							P10	Q1	Median	Q3	P90	1-hour	24-hour		
SO ₂ (ppb)	33	687	100.0	0.9	0.0	36.7	0.0	0.0	0.1	0.3	1.5	0	0	0.009	
NO (ppb)	35	685	100.0	1.3	0.0	47.0	0.0	0.1	0.4	1.1	2.6	-	-	-	
NO ₂ (ppb)	35	685	100.0	3.8	0.0	30.8	0.6	0.9	1.9	5.0	9.3	0	0	0.012	
NO _x (ppb)	35	685	100.0	4.9	0.0	75.2	0.6	1.1	2.4	5.9	11.6	-	-	-	
Wind Speed (kph)	0	720	100.0	12.3	0.0	39.4	3.8	6.9	10.7	16.3	23.9	-	-	-	
Temperature (°C)	0	720	100.0	15.9	6.8	26.3	10.5	12.5	15.3	18.9	22.4	-	-	-	
Relative Humidity (%)	0	720	100.0	63.4	23.9	97.6	37.3	48.5	64.5	78.0	87.5	-	-	-	
Std Dev Wind Direction (deg)	0	720	100.0	22.1	4.1	96.9	7.7	10.9	15.7	24.8	47.4	-	-	-	
Std Dev Wind Speed (kph)	0	720	100.0	3.3	0.5	18.9	1.5	2.1	2.9	4.1	5.5	-	-	-	



WCAS - Meadows
Summary of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
June 2017

Maximum Value: 36.67 ppb on Jun 8 08:00		Maximum Daily Average: 9.28 ppb on Jun 8		Hours in Service: 720																													
Minimum Value: 0.0 ppb on Jun 1 08:00		Minimum Daily Average: 0.01 ppb on Jun 9		Hours of Data: 687																													
Maximum Diurnal Average: 2.02 ppb at hour 13		Minimum Diurnal Average: 0.32 ppb at hour 21		Hours of Missing Data: 33																													
Monthly Average: 0.873 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.3 P ₉₀ = 1.5 P ₉₉ = 18.4		Hours of Calibration: 33																													
				Percent Operational Time: 100.0																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Jun	0.2	0.1	Z	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	1.2	1.7	5.5	18.4	0.9	0.2	0.3	0.5	0.1	0.1	0.1	0.1	1.30	18.44							
2-Jun	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.04	0.21							
3-Jun	0.0	0.2	Z	0.0	0.1	0.2	0.2	0.2	0.1	0.2	0.9	4.4	0.4	0.3	0.5	0.4	0.3	1.8	1.5	0.5	0.5	0.3	0.5	0.1	0.60	4.45							
4-Jun	0.1	0.1	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.13	0.19							
5-Jun	0.0	0.0	Z	0.2	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.6	0.11	0.56							
6-Jun	0.5	0.3	Z	0.1	0.1	0.1	0.2	0.5	0.7	0.5	2.5	0.2	0.2	0.2	0.4	0.2	2.3	0.5	0.8	1.7	0.6	1.4	0.6	0.7	0.66	2.54							
7-Jun	0.9	0.3	Z	0.4	0.8	0.6	0.8	1.6	6.4	7.9	0.7	1.5	20.4	8.8	2.0	0.2	1.1	0.2	0.7	2.4	1.3	1.6	2.4	5.8	3.00	20.43							
8-Jun	7.0	2.6	Z	12.5	17.5	15.2	27.1	36.7	23.3	23.3	16.0	7.6	3.9	3.6	4.8	9.8	0.8	0.4	0.2	0.4	0.4	0.3	0.1	0.0	9.28	36.67							
9-Jun	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.06							
10-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.03	0.07							
11-Jun	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.02	0.10							
12-Jun	0.3	0.4	Z	1.0	1.3	1.3	0.5	0.3	0.5	0.9	0.9	0.6	0.4	0.3	0.4	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.5	0.4	0.47	1.33							
13-Jun	0.3	0.3	Z	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.2	0.5	0.3	0.1	0.1	0.1	0.18	0.45							
14-Jun	0.1	0.2	Z	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.06	0.18							
15-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	4.3	4.9	3.3	1.1	1.5	0.8	2.0	5.6	1.05	5.65							
16-Jun	6.3	9.3	Z	0.6	0.4	0.4	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.6	0.3	0.89	9.25							
17-Jun	0.0	0.0	Z	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	1.9	1.7	1.2	1.1	0.33	1.91							
18-Jun	0.6	0.3	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.7	1.2	3.8	0.8	0.1	0.0	0.0	0.43	3.78							
19-Jun	0.1	0.3	Z	0.2	0.4	0.5	0.2	0.2	0.5	0.8	2.0	0.9	18.9	4.8	1.3	2.4	9.7	1.3	0.8	0.2	0.2	0.3	0.2	0.9	2.05	18.94							
20-Jun	1.5	1.5	Z	1.8	2.0	1.1	1.1	0.9	0.3	0.2	0.2	0.2	0.2	0.2	0.2	6.7	3.7	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.96	6.72							
21-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.10							
22-Jun	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.07	0.22							
23-Jun	0.6	0.4	Z	0.2	0.1	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.20	0.57							
24-Jun	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.23							
25-Jun	0.1	0.5	Z	2.5	1.0	0.4	0.3	0.4	0.4	0.5	8.1	23.7	9.5	0.7	0.2	0.2	0.2	0.2	0.2	0.1	0.6	2.0	1.1	0.5	2.32	23.69							
26-Jun	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.4	0.5	0.5	0.5	6.5	3.9	4.4	4.0	3.9	2.5	1.7	1.0	0.6	0.6	0.1	0.0	0.0	1.40	6.52							
27-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.01	0.10							
28-Jun	0.1	0.2	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	0.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.14	2.23							
29-Jun	0.0	0.0	Z	0.7	0.8	0.5	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.77							
30-Jun	0.1	0.1	Z	0.2	0.4	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.09	0.38							
		0.65	0.59	--	0.71	0.87	0.74	1.08	1.43	1.16	1.23	1.12	1.58	2.02	0.91	0.71	1.51	0.92	0.51	0.37	0.43	0.32	0.32	0.34	0.57	Diurnal Average							
		6.96	9.25	--	12.47	17.46	15.16	27.15	36.67	23.30	23.32	15.96	23.69	20.43	8.85	5.51	18.44	9.73	4.88	3.33	3.78	1.91	1.96	2.42	5.75	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAQO):		1-hr 172 ppb				24-hr 48 ppb																											



WCAS - Meadows
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
June 2017

Maximum Value: 47.00 ppb on Jun 25 04:00		Maximum Daily Average: 4.62 ppb on Jun 8		Hours in Service: 720																													
Minimum Value: 0.0 ppb on Jun 1 05:00		Minimum Daily Average: 0.09 ppb on Jun 4		Hours of Data: 685																													
Maximum Diurnal Average: 3.14 ppb at hour 4		Minimum Diurnal Average: 0.56 ppb at hour 22		Hours of Missing Data: 35																													
Monthly Average: 1.250 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.4 Q ₃ = 1.1 P ₉₀ = 2.6 P ₉₉ = 16.4		Hours of Calibration: 35																													
				Percent Operational Time: 100.0																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Jun	0.1	0.7	Z	0.1	0.0	1.4	0.0	0.0	0.4	0.5	0.4	0.4	0.9	1.1	3.0	12.2	0.7	0.7	0.4	4.7	0.4	0.2	0.0	0.0	1.23	12.15							
2-Jun	0.0	0.0	Z	0.2	0.0	0.0	0.0	0.0	0.0	0.1	3.2	2.0	0.2	0.2	0.1	0.0	0.1	0.0	0.0	0.6	2.0	1.2	3.1	1.4	0.63	3.24							
3-Jun	0.4	6.5	Z	0.7	1.0	1.2	1.8	2.0	1.0	1.2	1.4	3.0	0.1	0.1	0.0	0.1	0.1	0.4	0.5	0.3	0.2	0.3	12.0	0.0	1.49	11.98							
4-Jun	0.0	0.0	Z	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.09	0.78							
5-Jun	0.1	0.2	Z	0.3	0.1	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.1	0.1	0.2	0.4	0.3	0.2	0.3	0.3	0.4	0.8	0.2	16.5	0.91	16.48							
6-Jun	15.9	2.9	Z	0.3	0.1	2.2	1.8	1.4	1.1	1.0	1.1	0.1	0.0	0.1	0.1	0.8	0.4	0.4	0.5	0.4	0.1	0.0	0.1	1.33	15.93								
7-Jun	0.1	0.2	Z	0.1	0.0	0.5	0.7	1.4	3.7	4.5	0.6	0.9	8.7	2.9	0.6	0.2	0.5	0.4	0.4	0.5	0.4	0.1	0.0	0.1	1.20	8.72							
8-Jun	0.1	0.1	Z	2.5	4.9	5.5	20.5	27.0	13.3	12.7	7.5	3.0	0.9	0.7	1.0	2.8	0.5	0.6	0.5	0.5	0.4	0.3	0.6	0.3	4.62	26.95							
9-Jun	0.3	0.9	Z	0.5	0.7	0.7	0.3	0.7	0.5	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23	0.94							
10-Jun	0.0	0.0	Z	0.9	0.9	0.7	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.5	0.5	0.5	0.5	0.4	0.5	0.7	0.2	0.43	0.93							
11-Jun	1.1	0.1	Z	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.7	0.6	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.6	0.31	1.06							
12-Jun	0.7	0.4	Z	0.9	7.5	7.4	1.0	1.8	1.1	0.7	0.6	0.5	0.2	0.2	0.3	0.5	0.7	0.9	0.4	0.8	0.6	0.4	0.2	2.6	1.32	7.52							
13-Jun	0.1	0.0	Z	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.5	1.2	1.5	2.8	3.8	1.6	1.4	1.6	1.3	1.4	0.8	0.80	3.82							
14-Jun	2.8	3.9	Z	1.3	1.8	1.5	0.8	0.9	0.6	0.7	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.71	3.93							
15-Jun	0.2	0.1	Z	0.2	0.1	0.2	0.5	0.5	0.6	0.4	0.1	0.1	0.0	0.2	0.2	0.3	3.5	3.0	1.3	0.4	0.1	0.0	0.1	0.1	0.54	3.54							
16-Jun	0.2	3.2	Z	0.3	0.8	2.6	1.0	0.0	0.2	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.8	0.0	0.0	1.2	2.6	1.0	16.7	7.7	1.70	16.71							
17-Jun	0.0	0.0	Z	0.2	0.2	2.8	0.4	0.2	0.1	0.1	0.4	0.4	0.6	1.2	2.2	2.8	1.1	0.7	0.6	0.9	0.5	0.4	1.0	1.1	0.78	2.83							
18-Jun	0.7	4.2	Z	1.6	0.3	0.7	1.1	0.8	1.6	2.0	1.6	1.8	1.2	0.6	0.7	0.5	0.7	1.0	0.9	1.2	0.4	0.0	0.0	0.3	1.05	4.17							
19-Jun	0.5	3.9	Z	3.3	8.2	12.9	2.0	1.4	1.8	1.7	1.3	0.8	12.2	2.2	0.8	0.9	3.9	1.0	0.6	0.4	0.4	0.3	0.3	0.3	2.66	12.93							
20-Jun	0.2	0.4	Z	0.5	0.5	0.6	2.0	1.6	0.7	0.5	0.5	0.6	0.7	0.8	1.0	3.2	1.8	0.1	0.1	0.3	0.4	0.3	1.3	0.3	0.81	3.23							
21-Jun	0.1	0.1	Z	0.2	0.0	0.1	0.2	0.0	0.0	0.3	0.4	0.9	1.3	1.5	1.9	2.0	2.2	2.3	2.6	2.4	2.0	1.7	1.7	1.3	1.11	2.64							
22-Jun	0.6	0.4	Z	0.0	0.0	0.0	0.0	0.2	0.4	1.1	1.2	1.2	1.5	1.6	1.8	2.0	2.2	2.5	2.7	2.7	2.1	1.5	4.1	2.2	1.40	4.05							
23-Jun	7.0	3.4	Z	5.0	0.2	0.4	0.7	1.0	0.9	0.9	0.3	0.2	0.1	0.2	0.3	0.3	0.4	0.4	0.7	0.7	0.3	0.7	0.7	1.2	1.13	7.03							
24-Jun	0.6	1.5	Z	0.7	0.4	0.6	0.3	0.5	0.8	0.6	0.1	0.2	0.2	0.5	0.9	0.7	0.8	0.9	1.0	0.8	0.7	0.5	0.4	0.9	0.63	1.52							
25-Jun	1.6	1.4	Z	47.0	5.5	1.2	1.1	1.6	1.6	1.5	4.4	11.8	4.0	0.4	0.2	0.2	0.4	0.4	0.2	0.2	0.3	0.2	0.2	0.3	3.73	47.00							
26-Jun	0.3	0.4	Z	0.4	0.3	0.5	0.6	1.2	1.9	1.5	1.4	3.9	1.8	1.6	1.7	2.2	1.5	1.3	1.4	1.1	1.0	0.6	0.4	0.3	1.18	3.89							
27-Jun	0.2	0.1	Z	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6	0.10	1.05							
28-Jun	0.8	2.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	C	C	C	C	C	0.0	0.0	0.0	0.1	0.5	0.4	0.23	2.06							
29-Jun	0.4	0.4	Z	22.0	25.5	15.0	4.6	1.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.6	1.0	0.9	3.16	25.51							
30-Jun	4.5	2.7	Z	4.0	12.3	7.2	1.3	0.8	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.4	1.7	1.7	1.77	12.31								
		1.32	1.34	--	3.14	2.40	2.21	1.46	1.56	1.14	1.13	0.96	1.11	1.20	0.61	0.67	1.17	0.92	0.75	0.57	0.76	0.63	0.56	1.65	1.41	Diurnal Average							
		15.93	6.49	--	47.00	25.51	14.95	20.50	26.95	13.31	12.75	7.50	11.84	12.19	2.93	2.97	12.15	3.86	3.82	2.73	4.70	2.56	3.44	16.71	16.48	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																											



WCAS - Meadows Summary of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb June 2017

Maximum Value: 30.81 ppb on Jun 8 05:00	Maximum Daily Average: 11.91 ppb on Jun 8	Hours in Service: 720
Minimum Value: 0.0 ppb on Jun 28 10:00	Minimum Daily Average: 0.59 ppb on Jun 21	Hours of Data: 685
Maximum Diurnal Average: 7.24 ppb at hour 23	Minimum Diurnal Average: 1.78 ppb at hour 14	Hours of Missing Data: 35
Monthly Average: 3.798 ppb	Percentiles: P ₁ = 0.3 P ₁₀ = 0.6 Q ₁ = 0.9 Median = 1.9 Q ₃ = 5.0 P ₉₀ = 9.3 P ₉₉ = 25.0	Hours of Calibration: 35
		Percent Operational Time: 100.0

Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	2.0	5.2	Z	0.9	2.3	11.6	4.4	1.7	2.8	3.2	1.8	1.2	2.7	3.0	7.5	18.2	2.7	3.7	2.0	5.6	2.3	2.0	1.9	2.2	3.95	18.23
2-Jun	2.7	2.3	Z	7.5	1.5	4.3	3.9	3.4	1.0	1.1	3.2	2.1	0.7	0.6	0.9	0.9	1.2	0.6	0.6	2.4	7.0	6.2	5.0	4.6	2.77	7.49
3-Jun	4.8	14.7	Z	8.5	4.9	4.8	4.5	4.2	3.3	3.6	4.1	7.2	1.7	2.2	1.8	2.0	2.2	3.7	4.3	4.5	6.3	9.8	26.6	1.2	5.70	26.60
4-Jun	0.9	0.8	Z	3.5	2.6	1.4	1.5	1.1	0.8	0.7	1.0	0.9	0.9	0.9	0.9	1.0	0.9	0.9	1.1	1.7	1.9	0.9	6.6	8.6	1.81	8.57
5-Jun	1.9	2.2	Z	1.2	1.4	1.5	1.8	1.3	1.3	1.4	1.1	1.2	1.2	0.9	0.7	0.7	0.7	0.7	0.7	0.7	2.9	11.0	17.6	21.8	3.30	21.79
6-Jun	19.2	11.0	Z	5.9	5.9	9.3	4.9	3.8	3.8	3.7	4.1	1.2	1.3	1.2	1.5	1.3	3.6	1.9	2.1	3.9	2.7	4.4	5.6	5.4	4.68	19.19
7-Jun	6.2	6.1	Z	5.9	4.8	5.2	4.0	4.7	8.4	8.9	2.5	3.1	15.1	9.3	3.6	2.0	2.9	1.9	2.7	6.1	6.0	5.8	7.5	14.2	5.95	15.05
8-Jun	12.8	8.6	Z	25.3	30.8	26.0	26.8	27.7	20.0	18.0	14.9	8.7	5.0	5.1	6.4	12.1	2.4	2.1	2.1	2.0	2.1	2.7	6.7	5.4	11.91	30.81
9-Jun	2.2	7.5	Z	2.4	5.4	3.6	1.9	3.1	2.2	1.4	2.1	0.6	0.7	0.6	0.7	0.6	0.8	0.6	2.0	0.5	0.5	0.6	0.6	0.6	1.79	7.49
10-Jun	0.8	1.4	Z	0.7	0.7	0.7	0.6	0.6	0.5	0.3	0.4	0.5	0.4	0.6	0.6	0.7	0.6	0.7	0.8	1.3	1.2	4.9	7.0	3.4	1.28	7.00
11-Jun	6.8	1.5	Z	1.6	1.0	0.6	0.6	0.4	0.5	0.5	0.4	0.5	0.7	0.9	0.6	0.8	0.8	0.7	0.7	0.7	1.2	1.5	3.0	7.5	1.46	7.46
12-Jun	9.1	9.4	Z	9.5	12.5	9.5	3.5	3.2	2.0	1.7	2.0	2.0	1.7	1.5	1.8	1.6	1.7	3.2	1.7	3.5	2.8	2.1	3.8	15.8	4.59	15.83
13-Jun	2.4	2.2	Z	1.4	4.7	4.4	1.4	1.6	1.2	0.9	0.9	1.0	1.0	2.5	4.5	5.0	8.0	8.8	5.5	4.4	5.6	3.7	4.0	6.3	3.54	8.82
14-Jun	11.1	13.5	Z	3.7	6.8	9.5	6.0	3.4	1.8	1.5	1.1	1.1	1.4	0.9	0.8	0.7	0.9	0.9	0.9	1.3	0.8	0.9	1.2	1.4	3.11	13.49
15-Jun	2.7	1.8	Z	1.3	1.5	1.3	1.4	1.2	1.1	0.8	0.9	0.8	0.8	0.8	0.9	0.9	5.3	6.9	4.7	2.2	3.3	3.6	7.0	11.3	2.72	11.30
16-Jun	13.4	17.6	Z	4.9	7.4	11.5	5.0	2.1	2.3	1.2	0.9	0.8	0.9	0.8	0.9	1.1	2.0	0.9	2.2	6.3	7.6	5.0	14.8	7.4	5.09	17.60
17-Jun	0.7	1.2	Z	1.5	2.1	6.6	1.5	0.9	0.7	0.5	0.4	0.4	0.4	0.5	0.7	0.8	0.7	0.7	1.0	4.1	9.6	12.2	15.3	10.5	3.18	15.26
18-Jun	8.4	13.1	Z	5.3	2.6	3.9	3.6	1.6	2.9	2.9	1.3	0.9	0.9	1.0	1.1	1.2	1.1	2.2	3.3	9.0	3.2	0.7	0.8	4.1	3.26	13.07
19-Jun	6.2	11.5	Z	13.9	13.8	10.9	3.8	2.4	2.6	2.5	2.8	1.9	13.2	4.5	2.1	3.0	8.7	2.4	2.1	2.5	5.3	5.3	5.8	7.1	5.84	13.90
20-Jun	5.9	6.6	Z	6.3	7.9	6.0	7.5	4.5	2.1	1.2	1.0	1.0	1.1	1.0	1.4	8.3	5.1	0.6	0.6	1.2	4.5	3.8	5.5	2.8	3.74	8.30
21-Jun	1.6	1.1	Z	0.7	0.9	0.8	0.8	0.8	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.6	0.6	0.6	0.5	0.59	1.58
22-Jun	0.6	0.5	Z	0.5	0.6	0.7	0.5	0.5	0.3	0.4	0.4	0.4	0.3	0.4	0.5	0.4	0.4	0.4	0.5	1.0	1.0	4.6	12.2	13.3	1.75	13.27
23-Jun	16.3	13.3	Z	15.7	3.1	2.0	1.7	1.9	1.6	1.1	0.7	0.7	0.7	0.8	0.7	0.6	0.6	0.7	1.0	1.5	2.5	6.7	9.0	8.8	4.00	16.29
24-Jun	8.7	11.3	Z	8.6	4.4	3.7	1.7	1.4	1.8	1.9	1.1	0.9	0.9	1.0	1.4	1.3	1.1	1.1	1.3	1.2	2.7	7.6	13.9	20.5	4.33	20.52
25-Jun	20.4	16.1	Z	28.5	20.6	7.8	4.6	4.7	4.3	3.7	8.5	18.5	8.6	1.9	1.8	1.7	2.0	1.7	1.3	2.2	5.6	7.0	6.1	6.4	7.99	28.53
26-Jun	6.2	6.6	Z	3.6	4.0	5.0	3.0	3.9	4.3	3.4	3.8	7.8	5.2	5.7	4.7	4.3	3.9	3.1	3.2	3.0	3.7	1.5	1.5	1.0	4.02	7.84
27-Jun	1.2	0.5	Z	0.5	0.6	1.2	0.6	0.5	0.3	0.2	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.5	0.4	0.7	2.1	2.4	8.3	3.7	1.17	8.34
28-Jun	3.7	5.9	Z	0.4	0.5	0.3	0.2	0.6	0.2	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	1.2	1.4	1.0	1.7	2.1	1.17	5.86
29-Jun	1.4	1.8	Z	12.0	13.2	11.2	4.4	1.3	1.2	0.9	0.9	1.0	1.3	1.4	1.5	1.3	1.0	1.3	1.3	6.3	5.2	6.7	8.0	7.6	4.00	13.15
30-Jun	8.3	13.3	Z	9.8	12.6	11.8	2.6	2.1	1.7	1.9	0.9	0.6	0.7	0.9	1.0	0.9	1.0	0.8	1.3	1.9	5.5	9.2	9.3	9.5	4.68	13.34

6.28	6.96	--	6.39	6.03	5.90	3.62	3.03	2.57	2.34	2.13	2.26	2.34	1.78	1.80	2.57	2.17	1.87	1.78	2.79	3.56	4.49	7.24	7.16	Diurnal Average	
20.39	17.60	--	28.53	30.81	26.03	26.78	27.75	19.98	18.01	14.90	18.45	15.05	9.28	7.50	18.23	8.69	8.82	5.51	9.03	9.64	12.18	26.60	21.79	Diurnal Maximum	

Z - zerspan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb



WCAS - Meadows
Summary of Hourly Averages

NOx (NO_x) - ppb
June 2017

Maximum Value: 75.16 ppb on Jun 25 04:00		Maximum Daily Average: 16.41 ppb on Jun 8		Hours in Service:	720																												
Minimum Value: 0.0 ppb on Jun 4 22:00		Minimum Daily Average: 1.01 ppb on Jun 28		Hours of Data:	685																												
Maximum Diurnal Average: 9.46 ppb at hour 4		Minimum Diurnal Average: 2.16 ppb at hour 19		Hours of Missing Data:	35																												
Monthly Average: 4.946 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.6 Q ₁ = 1.1 Median = 2.4 Q ₃ = 5.9 P ₉₀ = 11.6 P ₉₉ = 34.6		Hours of Calibration:	35																												
				Percent Operational Time:	100.0																												
Day	Hourly Period Ending At																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Jun	2.1	5.8	Z	1.0	2.3	12.9	4.3	1.7	3.2	3.7	2.3	1.6	3.6	4.0	10.4	30.2	3.3	4.4	2.3	10.2	2.7	2.2	1.6	1.7	5.12	30.24							
2-Jun	2.6	2.2	Z	7.6	1.4	4.3	3.8	3.4	1.0	1.2	6.4	4.1	0.9	0.7	1.0	0.9	1.3	0.6	0.6	2.9	8.9	7.3	8.0	5.9	3.36	8.94							
3-Jun	5.2	21.1	Z	9.2	5.8	5.9	6.2	6.1	4.3	4.8	5.5	10.1	1.8	2.2	1.8	2.0	2.2	4.0	4.8	4.7	6.4	10.0	38.3	0.7	7.08	38.31							
4-Jun	0.5	0.7	Z	3.9	2.4	0.9	1.2	0.8	0.6	1.0	1.7	1.3	0.7	0.7	0.8	0.6	0.6	0.8	1.4	1.3	0.0	6.3	8.7	1.63	8.67								
5-Jun	2.0	2.4	Z	1.5	1.5	1.5	1.8	1.3	1.5	1.8	1.1	1.2	1.3	1.0	1.0	1.1	1.0	1.0	1.1	1.1	3.4	11.8	17.7	38.1	4.21	38.11							
6-Jun	35.0	13.8	Z	6.2	5.9	11.5	6.6	5.2	4.9	4.7	5.2	1.4	1.4	1.2	1.6	1.5	4.4	2.4	2.5	4.5	3.2	4.5	5.6	5.5	6.03	35.00							
7-Jun	6.3	6.3	Z	6.0	4.9	5.7	4.6	6.0	12.1	13.3	3.1	4.0	23.6	12.2	4.2	2.3	3.4	2.3	3.0	6.6	6.4	5.8	7.4	14.1	7.11	23.64							
8-Jun	12.8	8.6	Z	27.6	35.5	31.3	47.0	54.4	33.1	30.6	22.2	11.5	5.8	5.8	7.3	14.7	2.9	2.7	2.6	2.6	2.5	3.0	7.3	5.6	16.41	54.40							
9-Jun	2.4	8.4	Z	2.9	6.1	4.3	2.2	3.8	2.7	1.7	2.4	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	1.65	8.38							
10-Jun	0.0	0.7	Z	1.7	1.6	1.5	1.3	1.3	1.0	0.7	0.8	0.8	0.7	0.9	0.9	1.0	1.1	1.2	1.3	1.8	1.6	5.5	7.7	3.7	1.70	7.66							
11-Jun	7.9	1.7	Z	2.1	1.5	1.0	1.0	0.7	0.8	0.9	0.7	0.9	1.2	1.7	1.2	1.1	1.0	0.8	0.8	0.7	1.2	1.5	3.1	8.0	1.80	7.98							
12-Jun	9.7	9.8	Z	10.3	19.9	16.8	4.5	5.0	3.1	2.4	2.5	2.4	1.9	1.7	2.1	2.0	2.4	4.0	2.1	4.2	3.2	2.4	3.9	18.3	5.85	19.90							
13-Jun	2.4	2.1	Z	1.4	4.6	4.3	1.3	1.6	1.2	1.0	0.9	1.0	0.9	3.0	5.7	6.5	10.6	12.5	7.0	5.7	7.1	4.9	5.4	7.0	4.27	12.53							
14-Jun	13.7	17.3	Z	4.9	8.5	10.9	6.7	4.2	2.3	2.2	1.4	1.4	1.6	1.1	0.9	0.8	1.0	0.9	0.9	1.3	0.9	0.8	1.2	1.4	3.75	17.28							
15-Jun	2.8	1.8	Z	1.5	1.5	1.5	1.8	1.6	1.7	1.2	0.9	0.8	0.8	0.9	1.1	1.2	8.8	9.8	5.9	2.6	3.4	3.5	7.0	11.3	3.19	11.33							
16-Jun	13.5	20.7	Z	5.2	8.1	13.9	5.9	2.1	2.5	1.2	0.9	0.7	0.9	1.0	1.2	1.4	2.8	0.7	2.1	7.4	10.1	5.9	31.4	15.0	6.73	31.37							
17-Jun	0.6	1.2	Z	1.7	2.3	9.4	1.8	1.1	0.8	0.6	0.7	0.8	1.0	1.7	2.9	3.5	1.8	1.4	1.6	4.9	10.0	12.5	16.1	11.5	3.92	16.13							
18-Jun	9.0	17.1	Z	6.9	2.8	4.5	4.6	2.4	4.4	4.9	2.8	2.6	2.0	1.5	1.7	1.7	1.7	3.1	4.2	10.1	3.5	0.8	0.7	4.4	4.24	17.08							
19-Jun	6.5	15.2	Z	17.0	21.8	23.7	5.8	3.8	4.3	4.1	4.1	2.6	25.2	6.7	2.9	3.8	12.4	3.3	2.7	2.8	5.6	5.5	6.0	7.3	8.41	25.20							
20-Jun	6.0	6.9	Z	6.8	8.4	6.5	9.4	6.1	2.8	1.7	1.5	1.6	1.8	1.8	2.5	11.5	6.9	0.7	0.7	1.5	4.9	4.1	6.7	3.1	4.51	11.46							
21-Jun	1.7	1.3	Z	0.9	0.9	0.9	1.1	0.7	0.4	0.7	0.8	1.3	1.7	1.9	2.4	2.4	2.5	2.8	3.2	3.0	2.6	2.3	2.3	1.9	1.73	3.22							
22-Jun	1.2	0.9	Z	0.4	0.2	0.2	0.4	0.7	0.7	1.5	1.7	1.7	1.8	2.0	2.3	2.5	2.6	2.8	3.3	3.7	3.1	6.1	16.2	15.4	3.11	16.18							
23-Jun	23.2	16.7	Z	20.6	3.3	2.3	2.5	2.9	2.5	2.0	1.0	0.9	0.8	1.0	1.0	0.9	1.0	1.1	1.7	2.1	2.9	7.3	9.6	9.9	5.10	23.20							
24-Jun	9.2	12.7	Z	9.1	4.8	4.2	2.0	1.9	2.6	2.4	1.2	1.1	1.1	1.4	2.3	1.9	1.8	2.0	2.3	2.0	3.4	7.9	14.2	21.3	4.90	21.26							
25-Jun	21.8	17.3	Z	75.2	25.9	8.9	5.5	6.3	5.8	5.1	12.7	30.1	12.5	2.2	1.9	1.8	2.3	2.0	1.4	2.3	5.8	7.0	6.2	6.6	11.59	75.16							
26-Jun	6.3	6.8	Z	3.8	4.2	5.3	3.5	5.1	6.1	4.7	5.0	11.6	7.0	7.1	6.3	6.4	5.4	4.3	4.6	4.1	4.6	2.0	1.8	1.3	5.10	11.59							
27-Jun	1.4	0.6	Z	0.7	0.5	1.4	0.6	0.3	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.3	0.1	0.3	0.0	0.2	1.6	2.1	9.3	4.3	1.07	9.29							
28-Jun	4.5	7.8	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	0.1	0.5	0.1	1.3	2.2	1.8	1.01	7.84						
29-Jun	1.5	2.1	Z	33.9	38.5	26.1	9.0	2.3	1.8	1.1	0.6	0.2	0.4	0.4	0.5	0.4	0.0	0.3	0.5	6.7	5.4	7.3	9.1	8.5	6.81	38.55							
30-Jun	12.8	16.0	Z	13.8	24.8	19.0	3.9	2.9	2.0	2.1	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.5	1.9	6.5	12.6	10.9	11.2	6.15	24.84							
		7.49	8.20	--	9.46	8.34	8.02	5.01	4.53	3.67	3.44	3.02	3.29	3.44	2.28	2.35	3.61	2.95	2.49	2.16	3.45	4.07	4.93	8.77	8.44	Diurnal Average							
		35.00	21.07	--	75.16	38.55	31.33	47.00	54.40	33.07	30.56	22.20	30.06	25.20	12.15	10.41	30.24	12.43	12.53	7.02	10.24	10.13	12.60	38.31	38.11	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																											

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 908, Meadows

Calibration Date: June 28, 2017

Parameter: NO/NO₂/NO_x

Instrument: Teco 42 CTL

Serial Number: 42c-70987-367

Previous Calibration Date: May 25 2017

Calibration: Routine

Calibration Equipment: SABIO 2010 04300810

Barometric Pressure: 27.20" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: FF27662

Temperature: 20.5° C

Cylinder Concentration: 11.9 ppm NO 12.0 ppm NO_x

In Service: Jun 02 2016; exp: Jan 20 2019

Technician: Dean Yustak

Instrument Settings	NO bkg ppb	NO _x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO _x Coefficient	NO ₂ Coefficient	Monitoring Range
Previous	9.5	9.9	na	0.995	1.005	1.000	300 ppb
Current	7.1	7.5	na	1.010	1.010	1.000	300 ppb

NO	Final Zero: 1.3 ppb	Final Span: 240.5 ppb	As Found Correction Factor: 1.023
NO ₂	Final Zero: 0.8 ppb	Final Span: 2.3 ppb	As Found Correction Factor: NA
NO _x	Final Zero: 1.9 ppb	Final Span: 242.7 ppb	As Found Correction Factor: 1.032

Results of Linear Regression			Slope	Intercept	R ²
NO	R _c vs C _c	Previous	99.515460	52.632080	0.999976
		Current	99.698130	93.296300	0.999906
	C _i vs C _c	Current	1.000000	-0.000052	0.999906
NO ₂	R _c vs C _c	Previous	99.561180	80.597200	0.999976
		Current	99.421300	-67.762890	0.999955
	C _i vs C _c	Current	1.000000	0.000001	0.999955
NO _x	R _c vs C _c	Previous	99.967410	50.217560	0.999976
		Current	100.018000	66.833150	0.999951
	C _i vs C _c	Current	1.000000	-0.000030	0.999951

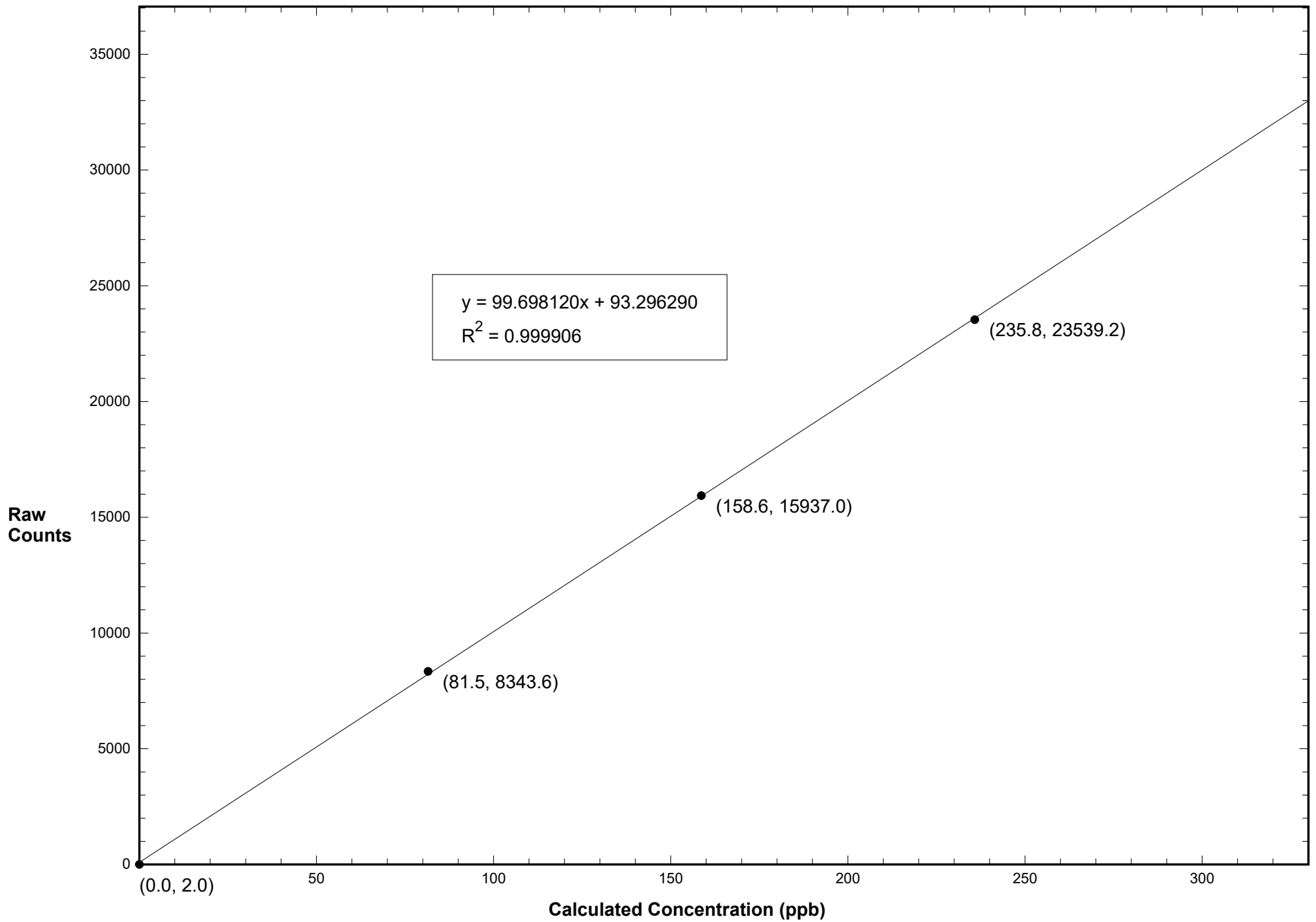
Comments: Sample Flow 0.527 lpm

Calibration Data Summary (Page 2)

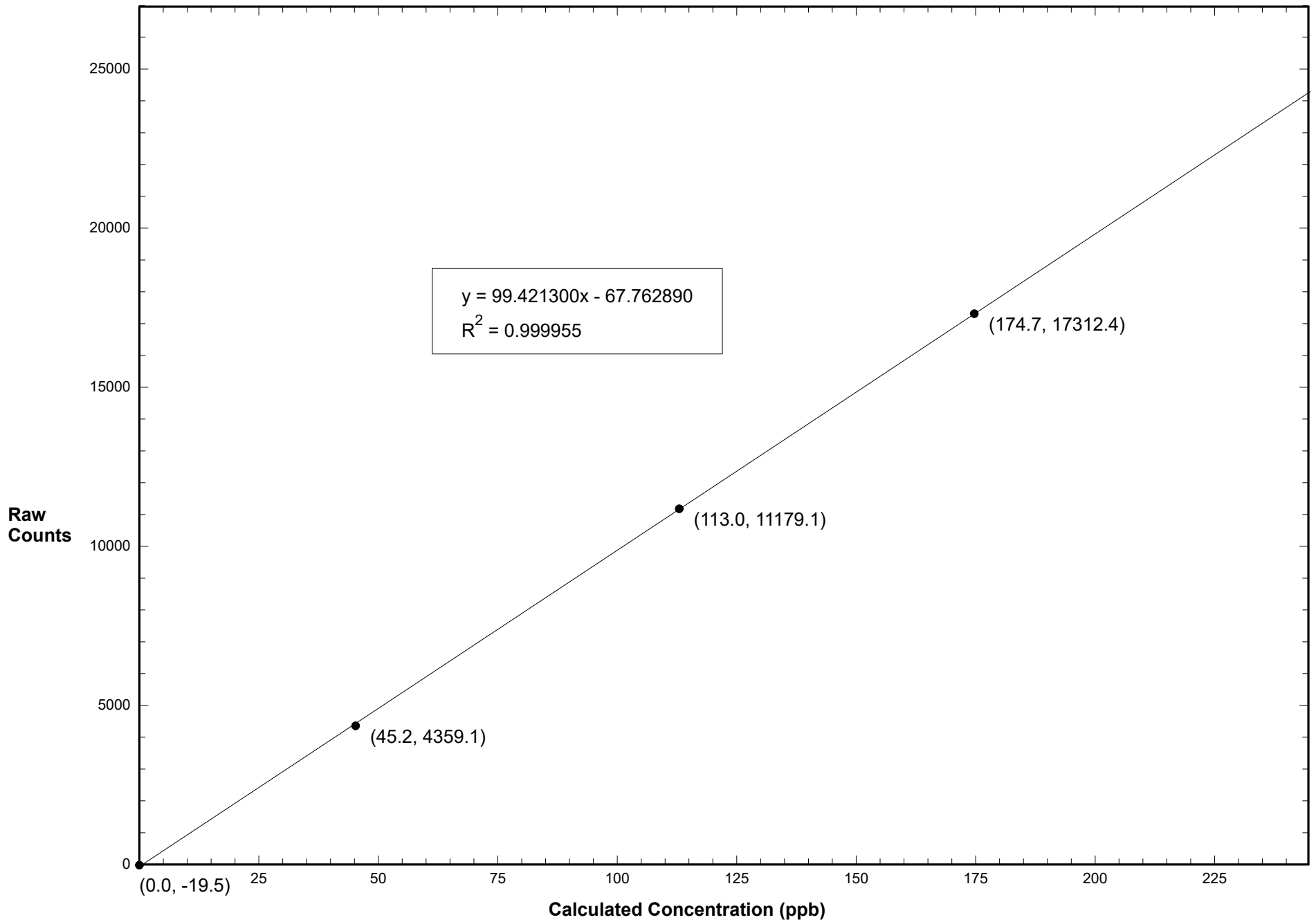
June 28, 2017 - Station 908

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i		
0.07700	3.809	235.8	23539.2	235.2	1.003		
0.05161	3.820	158.6	15937.0	158.9	0.998		
0.02630	3.814	81.5	8343.6	82.8	0.985		
0.00000	3.794	0.0	2.0	-0.9			
NO Calibration					Average Correction Factor: 0.995		
0.07700	3.809	237.8	23818.2	237.5	1.001		
0.05161	3.820	160.0	16059.8	159.9	1.000		
0.02630	3.814	82.2	8387.3	83.2	0.988		
0.00000	3.794	0.0	2.9	-0.6			
NO _x Calibration					Average Correction Factor: 0.997		
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO ₂ , C _c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
236.7	6273.5	62.0	174.7	17312.4	174.8	0.999	1.001
236.7	12428.8	123.7	113.0	11179.1	113.1	0.999	1.001
236.7	19181.3	191.5	45.2	4359.1	44.5	1.016	0.984
			0.0	-19.5	0.5		
Average Correction Factor: 1.005							
NO ₂ Gas Phase Titration					Average Converter Efficiency: 0.995		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	1.001	1.003	0.2				
NO ₂	1.005	0.999	-0.6				
NO _x	1.001	1.001	0.0				

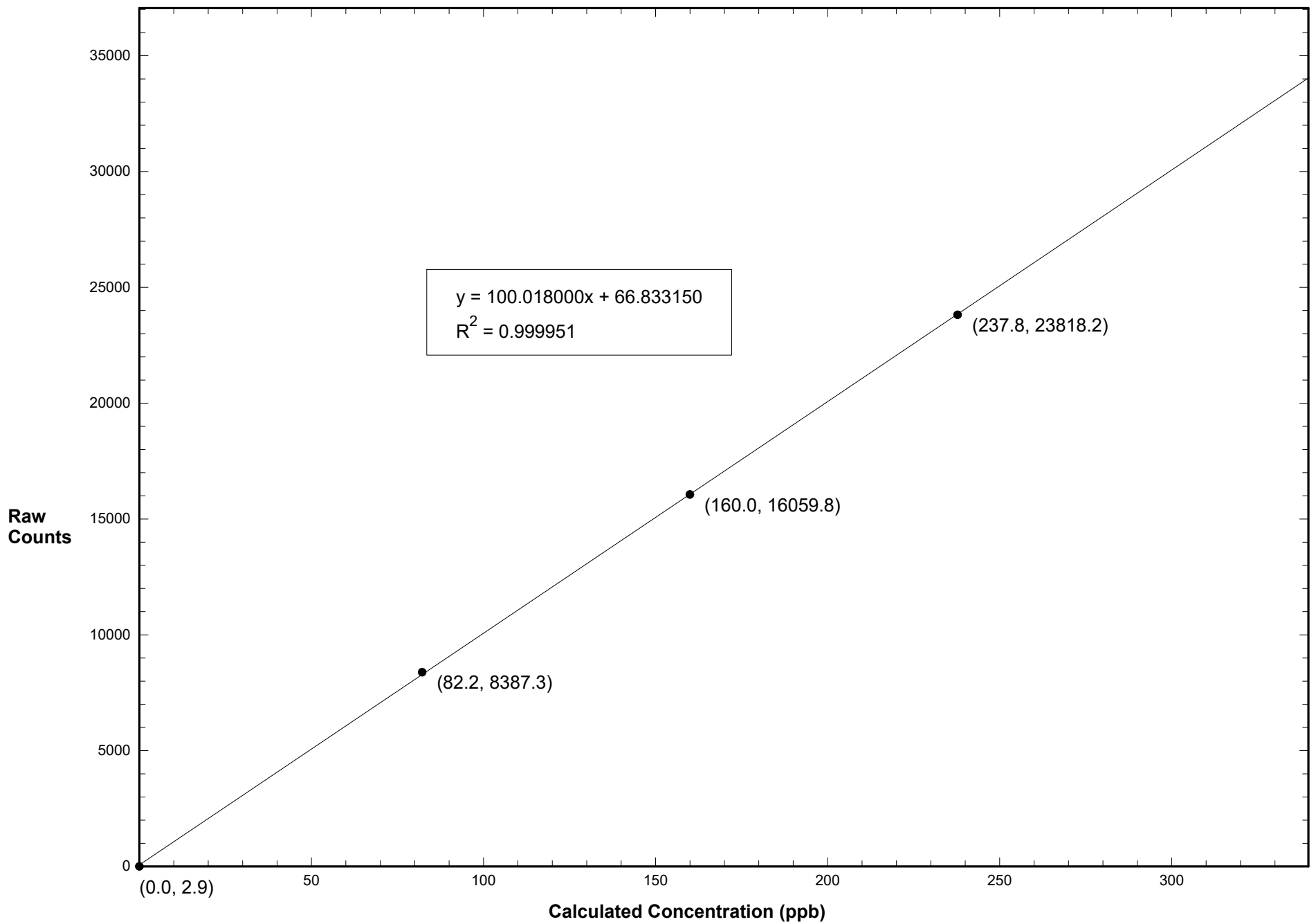
Station 908 NO June 28, 2017: Linear Regression



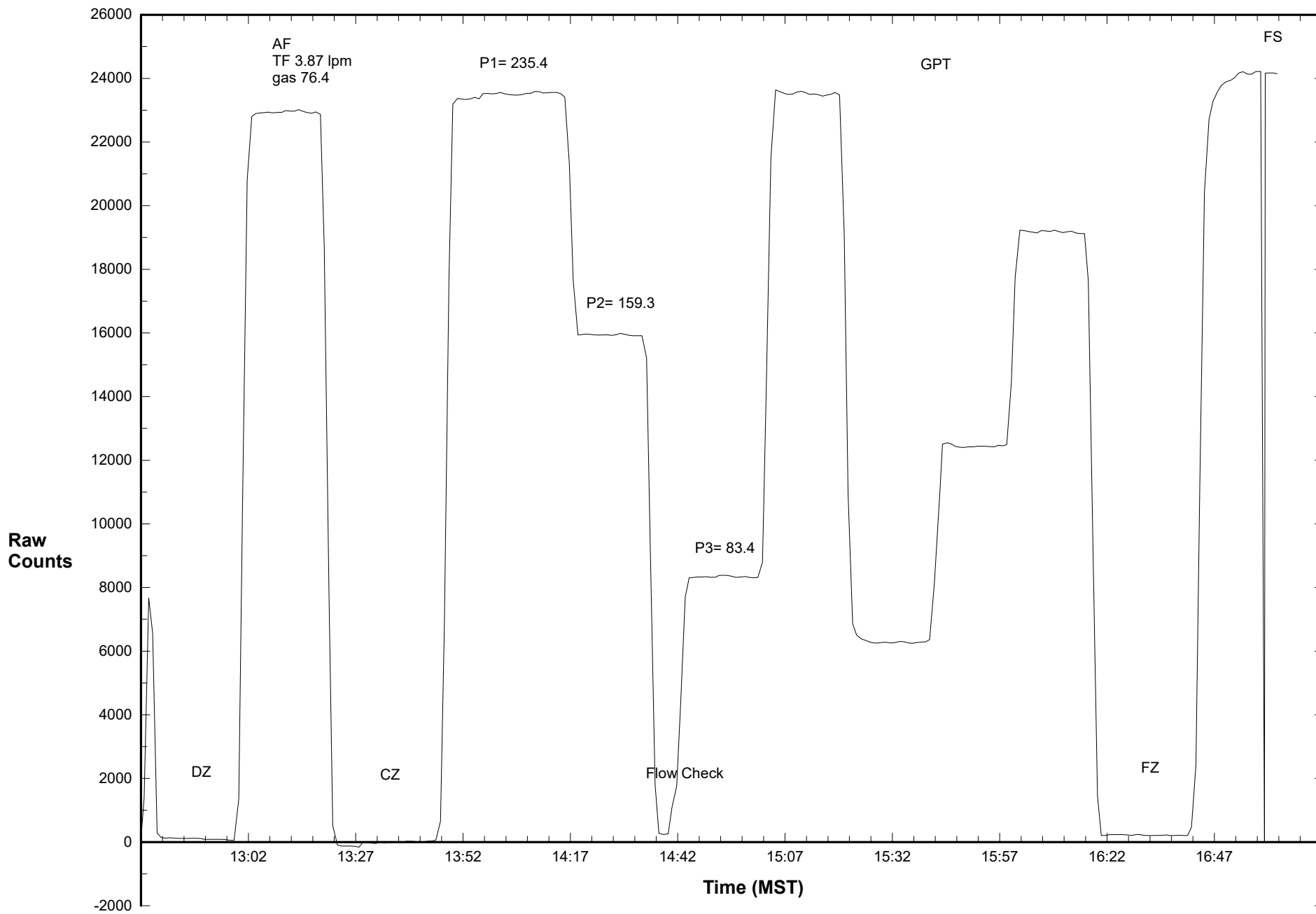
Station 908 NO2 June 28, 2017: Linear Regression



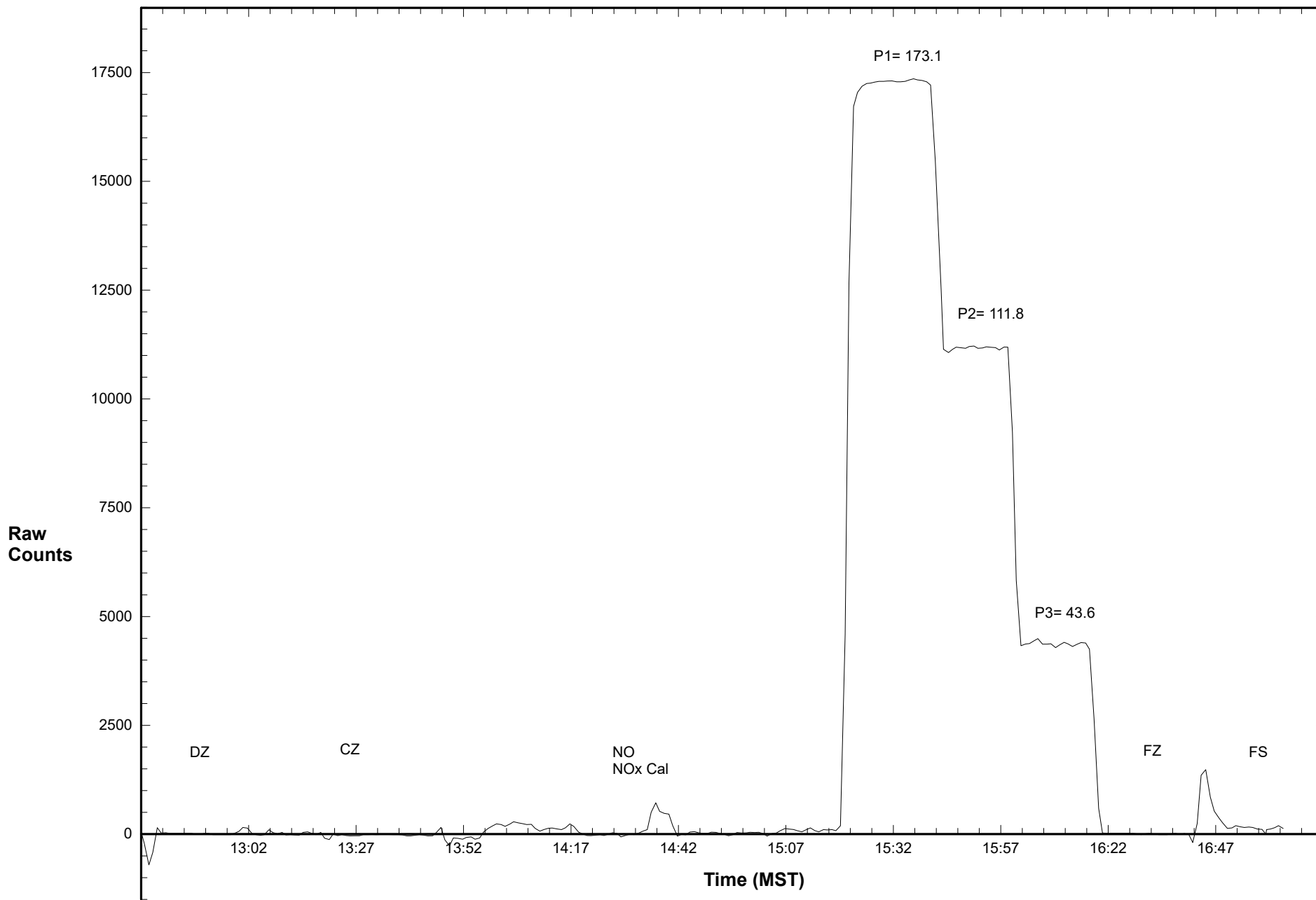
Station 908 NOX June 28, 2017: Linear Regression



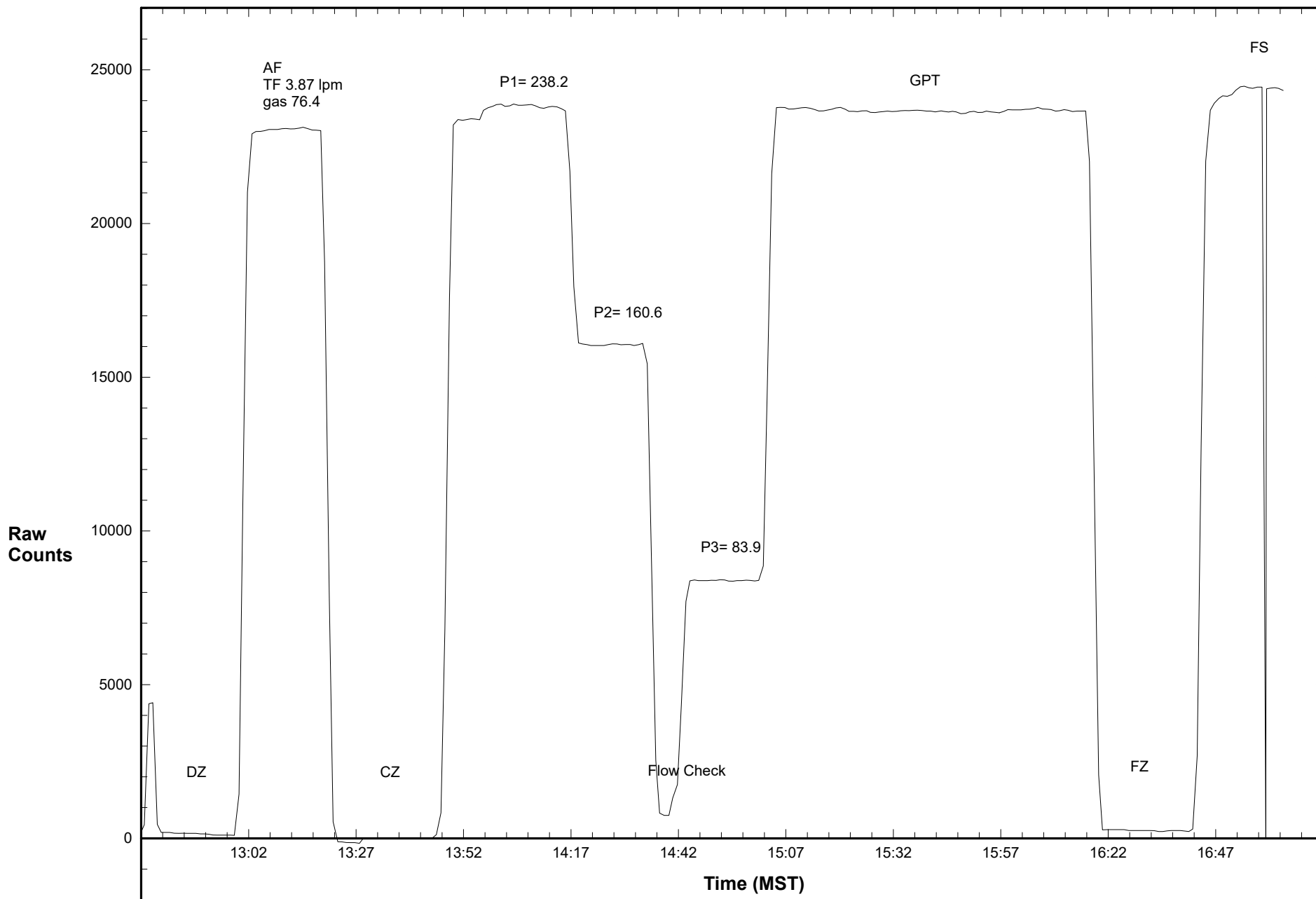
Station 908 NO June 28, 2017: Calibration Graph



Station 908 NO2 June 28, 2017: Calibration Graph



Station 908 NOX June 28, 2017: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 908, Meadows

Calibration Date: June 28, 2017

Parameter: SO₂

Instrument: Teco 43 CTL

Serial Number: 0333803285

Previous Calibration Date: May 25 2017

Calibration: Routine

Calibration Equipment: SABIO 2010 04300810

Barometric Pressure: 27.20" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF27662

Temperature: 20.5° C

Cylinder Concentration: 5.92 ppm SO₂

In Service: Jun 02 2016; exp: Jan 20 2019

Technician: Dean Yustak

Instrument Settings	SO ₂ bkg ppb	SO ₂ Coefficient	Monitoring Range
Previous	3.06	1.507	200 ppb
Current	2.97	1.537	200 ppb

Final Zero: 0.1 ppb

Final Span: 63.3 ppb

As Found Correction Factor: 1.012

SO ₂ Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i
0.0770	3.809	117.3	17598.3	117.3	1.000
0.0516	3.820	78.9	11851.5	79.0	0.999
0.0263	3.814	40.5	6064.5	40.4	1.003
0.0000	3.794	0.0	13.9	0.1	

Results of Linear Regression

R _c vs C _c	Slope	Intercept	R ²
Previous	149.692400	2.861747	0.999999
Current	149.991600	3.988419	0.999996
C _i vs C _c			
Current	1.000000	0.000011	0.999996

Average Correction Factor: 1.001

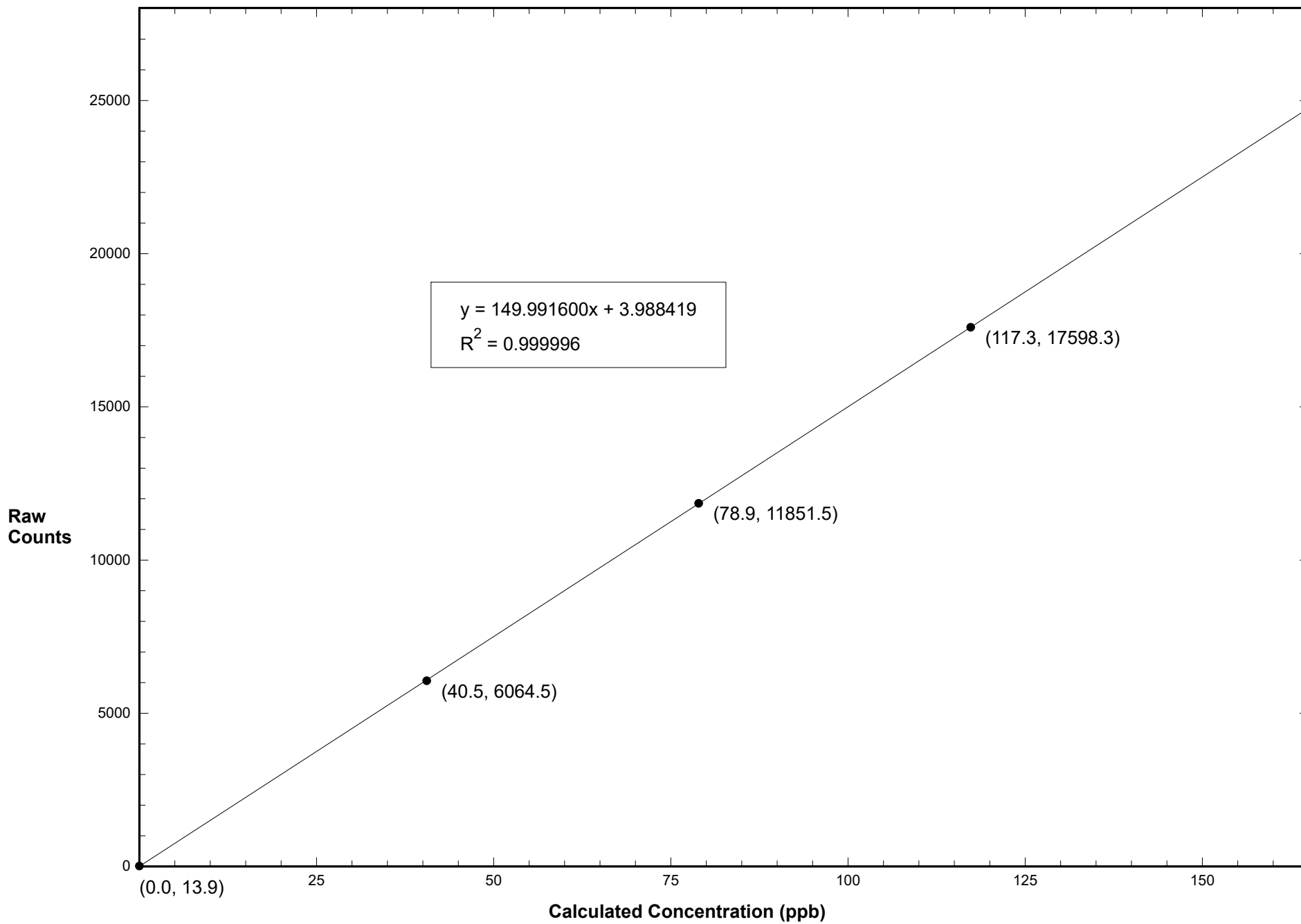
Previous Correction Factor: 1.000

Current Correction Factor: 1.000

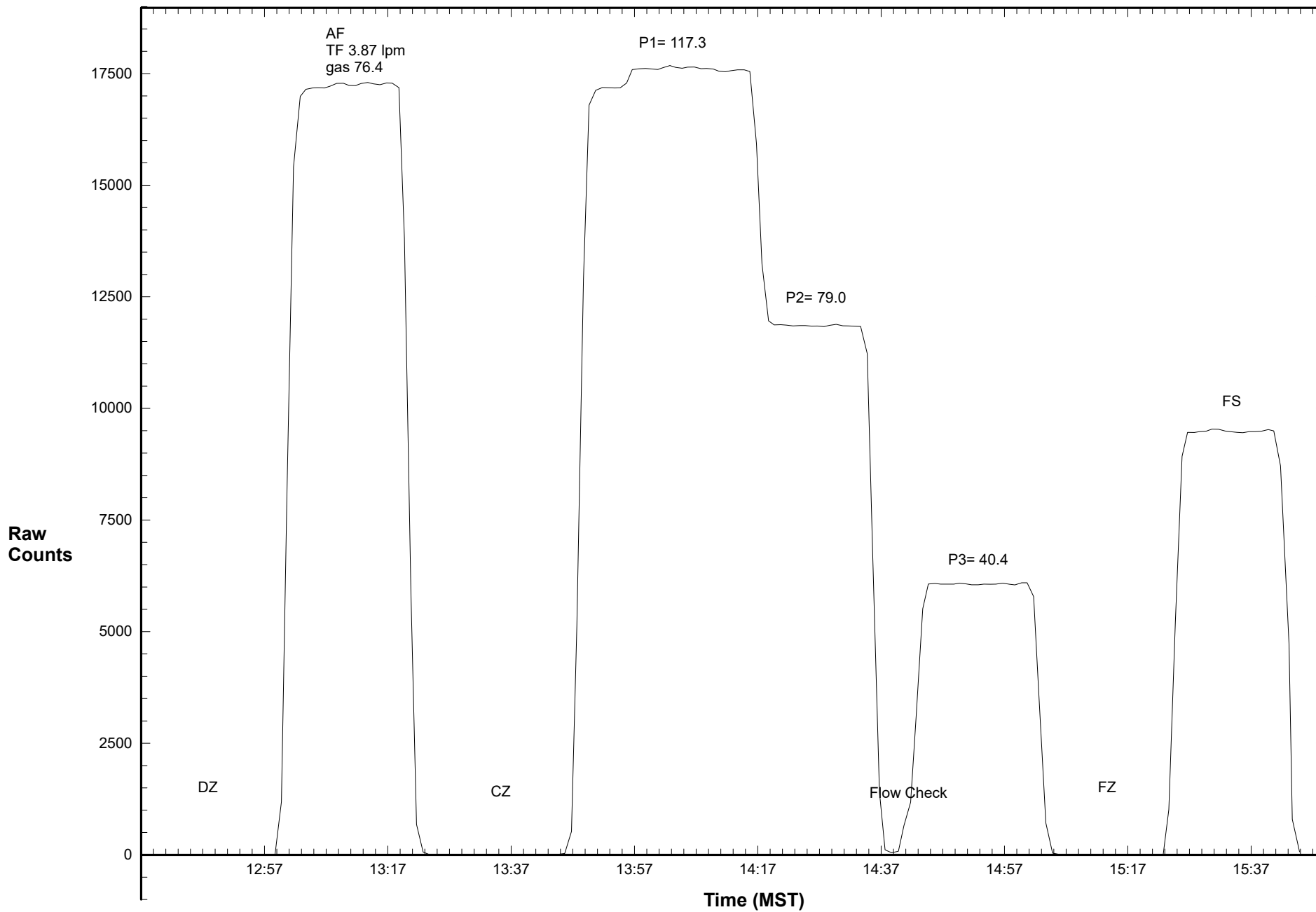
Percent Change of Correction Factor: 0.0

Comments: Sample Flow: 0.350 lpm

Station 908 SO2 June 28, 2017: Linear Regression



Station 908 SO2 June 28, 2017: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
METEOROLOGICAL DATA**

**AMS 908
MEADOWS
JUNE 2017**

Operations and Data Collection by:
West Central Airshed Society
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:
West Central Airshed Society
Drayton Valley, Alberta



WCAS - Meadows
Summary of Hourly Averages

External Temperature (ET) - C
June 2017

Maximum Value: 26.32 C on Jun 26 18:00 Maximum Daily Average: 20.71 C on Jun 30																				Hours in Service: 720 Hours of Data: 720						
Minimum Value: 6.8 C on Jun 19 04:00 Minimum Daily Average: 12.04 C on Jun 9 Maximum Diurnal Average: 19.97 C at hour 16 Minimum Diurnal Average: 11.32 C at hour 5 Monthly Average: 15.866 C Percentiles: P ₁ = 7.7 P ₁₀ = 10.5 Q ₁ = 12.5 Median = 15.3 Q ₃ = 18.9 P ₉₀ = 22.4 P ₉₉ = 25.8																				Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	17.9	15.7	15.2	15.2	14.5	13.5	13.5	14.4	16.8	18.3	18.4	19.2	20.5	21.6	22.4	23.0	19.9	17.9	19.2	19.8	17.9	17.3	14.1	14.3	17.52	22.98
2-Jun	14.9	14.0	13.0	13.0	12.7	12.5	12.6	12.9	13.6	14.5	15.8	17.4	17.8	19.6	16.0	14.6	15.8	14.7	15.1	16.1	14.8	12.7	12.3	12.1	14.53	19.56
3-Jun	11.6	10.7	9.7	8.4	8.3	9.7	12.7	15.0	17.3	16.4	17.8	20.2	21.1	21.5	22.7	23.2	23.4	23.0	21.7	21.3	19.9	17.8	15.0	15.2	16.81	23.40
4-Jun	14.4	13.6	12.7	11.2	9.3	10.4	10.8	11.8	14.5	16.5	17.7	17.9	18.3	18.9	19.5	19.4	19.2	18.7	17.6	16.5	14.3	12.7	12.9	12.8	15.06	19.49
5-Jun	12.8	11.8	11.9	12.5	11.4	11.1	11.8	12.8	14.8	16.5	17.6	18.9	19.6	20.0	20.4	21.1	21.2	21.4	21.2	21.1	18.6	14.5	12.6	10.8	16.10	21.42
6-Jun	9.7	10.3	10.5	9.8	10.6	11.9	14.0	16.1	18.1	19.6	21.4	22.4	22.9	23.1	23.7	23.8	24.1	23.5	23.3	22.5	19.9	17.6	18.4	17.7	18.13	24.07
7-Jun	16.8	15.3	14.3	13.5	11.7	12.5	14.7	16.1	17.6	18.3	19.4	21.1	22.9	24.1	25.2	25.6	26.0	25.8	25.0	23.3	21.3	19.3	18.2	18.3	19.43	25.99
8-Jun	18.5	17.6	17.2	16.6	15.8	15.8	16.4	17.2	18.7	20.8	22.6	24.7	25.7	25.7	25.5	25.2	24.7	23.9	24.0	23.3	22.9	20.3	15.9	15.4	20.60	25.68
9-Jun	14.6	14.6	14.3	14.3	13.9	13.5	13.8	14.8	15.5	14.8	14.5	14.1	12.6	11.4	11.2	10.3	9.8	9.4	9.0	8.9	8.9	8.7	8.3	7.7	12.04	15.47
10-Jun	7.9	8.9	11.5	11.8	11.4	11.0	10.8	10.5	10.5	11.6	13.2	14.6	15.5	16.6	17.1	17.4	18.3	17.6	18.2	17.4	15.4	13.1	12.1	12.7	13.54	18.29
11-Jun	12.6	12.5	12.3	12.5	12.0	10.3	9.6	9.3	9.0	9.6	10.8	11.3	12.1	12.8	13.4	13.5	13.9	14.2	13.8	13.7	13.2	12.8	12.5	12.4	12.08	14.15
12-Jun	12.1	11.0	10.4	10.8	10.8	11.2	13.4	14.6	16.5	18.4	19.4	20.4	21.5	22.5	23.5	24.3	23.9	21.9	19.1	20.1	19.2	18.7	18.1	16.6	17.43	24.26
13-Jun	16.4	15.9	15.1	14.1	13.3	13.1	13.4	14.2	15.3	15.9	16.8	16.5	16.4	16.3	14.8	16.2	17.8	20.9	20.0	17.4	16.2	15.2	14.3	13.7	15.80	20.85
14-Jun	12.9	12.8	12.4	12.0	12.0	12.1	12.0	12.8	13.6	14.3	15.1	15.5	15.0	14.0	13.6	14.4	14.9	14.3	14.0	14.4	14.0	12.8	12.8	11.2	13.46	15.51
15-Jun	10.6	10.2	9.4	9.2	8.0	8.6	10.6	12.1	14.1	16.4	17.6	18.3	18.3	18.4	18.7	18.9	19.2	19.2	19.2	17.6	16.1	15.3	14.7	14.1	14.78	19.23
16-Jun	13.3	13.3	13.0	12.3	12.0	12.1	13.1	14.1	15.1	16.4	17.9	18.3	18.7	19.2	19.3	20.2	20.3	11.7	14.3	13.5	13.4	12.7	12.3	10.9	14.90	20.34
17-Jun	10.4	9.6	9.3	8.9	8.3	8.9	10.5	12.3	14.1	15.6	16.6	17.5	18.4	19.0	19.7	20.3	20.5	21.1	20.6	18.0	16.8	15.5	14.4	13.4	14.99	21.07
18-Jun	11.4	10.9	11.0	10.2	10.8	11.9	11.7	15.4	17.4	17.8	18.9	20.1	17.8	13.9	16.5	18.5	18.6	18.8	18.1	17.8	17.1	15.3	14.0	11.0	15.20	20.14
19-Jun	8.9	7.7	8.0	6.8	6.8	9.3	11.6	14.0	14.4	15.5	16.6	19.7	19.0	19.9	20.3	20.3	20.5	20.5	20.1	19.8	18.8	18.3	17.9	17.0	15.48	20.53
20-Jun	16.8	15.9	15.2	13.8	12.6	13.4	14.7	15.4	16.7	18.3	20.0	21.1	21.7	21.6	21.6	21.2	18.2	11.6	11.5	11.6	11.5	10.6	10.4	10.7	15.67	21.69
21-Jun	9.7	8.5	8.7	9.1	8.9	9.3	10.5	12.2	13.7	14.8	15.7	16.6	17.3	17.7	17.4	17.2	17.3	16.5	16.1	14.7	13.4	12.7	11.6	10.9	13.35	17.66
22-Jun	9.2	8.1	7.8	7.7	8.0	8.5	9.2	9.9	10.1	11.2	11.7	13.5	14.5	15.3	15.9	16.5	16.8	16.9	16.9	16.1	15.1	12.9	9.7	9.4	12.12	16.94
23-Jun	8.4	8.6	7.7	7.6	8.1	9.9	10.9	13.2	15.0	16.6	18.4	19.3	19.8	18.7	19.9	21.1	20.3	20.9	20.1	19.7	18.6	15.4	12.9	11.5	15.11	21.09
24-Jun	11.8	10.9	10.9	10.6	12.1	11.1	12.3	14.8	16.5	18.0	19.3	20.6	21.1	21.6	22.2	21.2	21.3	21.6	21.8	21.3	19.1	16.2	13.9	13.1	16.80	22.24
25-Jun	12.3	11.9	11.4	11.7	12.1	12.0	13.2	14.7	17.1	19.9	21.3	22.9	24.2	24.8	25.3	25.7	25.8	25.4	24.4	23.3	22.1	20.6	18.9	17.7	19.12	25.83
26-Jun	17.5	17.1	16.6	16.6	15.3	15.0	15.9	17.6	19.1	20.8	22.5	22.4	23.1	24.3	25.9	26.2	26.3	26.3	25.8	22.9	21.3	16.9	15.2	14.6	20.22	26.32
27-Jun	14.5	14.2	13.3	12.5	11.7	10.4	11.9	12.7	13.5	10.8	12.2	15.5	17.6	18.0	17.1	16.5	14.0	15.5	15.0	14.1	13.9	13.6	13.5	13.8	13.99	17.96
28-Jun	13.1	13.2	13.5	12.6	12.1	11.5	11.7	12.3	13.0	11.9	11.7	12.2	12.8	13.4	13.9	14.8	15.0	15.5	14.1	15.2	14.2	13.2	12.8	13.3	13.21	15.49
29-Jun	13.5	13.0	10.6	9.6	9.3	10.3	12.7	14.6	16.6	18.0	18.9	20.4	21.4	22.3	23.0	23.4	23.9	24.2	24.6	22.6	20.4	18.3	18.3	18.3	17.83	24.56
30-Jun	17.2	17.2	16.5	16.4	16.0	15.8	17.3	19.5	20.6	21.5	22.3	22.9	23.8	24.6	24.9	25.3	25.7	25.6	25.0	23.8	22.5	18.8	17.3	16.6	20.71	25.66
	13.05	12.50	12.11	11.71	11.32	11.55	12.58	13.91	15.30	16.30	17.40	18.52	19.04	19.35	19.69	19.97	19.89	19.29	18.96	18.26	17.02	15.32	14.17	13.57		Diurnal Average
	18.54	17.55	17.16	16.65	15.99	15.81	17.33	19.51	20.61	21.51	22.64	24.71	25.66	25.68	25.94	26.20	26.31	26.32	25.82	23.84	22.86	20.59	18.95	18.29		Diurnal Maximum



WCAS - Meadows
Summary of Hourly Averages

Wind Speed (WS) - kph
June 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	4.7	9.1	10.2	20.2	13.1	7.0	2.6	7.4	4.9	2.2	5.8	9.6	9.2	12.3	14.4	10.5	8.9	2.3	2.9	2.5	3.2	12.7	27.0	11.5	3.80	26.99	
Dir	NE	W	WNW	W	W	SW	NNE	WNW	WSW	NW	NE	NE	ENE	NE	ENE	ENE	N	S	S	NNW	NE	WNW	W	NW	NW	W	
2 Spd	4.8	6.9	10.4	11.1	14.9	6.1	4.2	6.7	7.2	7.3	8.7	6.5	4.9	10.7	12.3	12.1	7.0	14.0	11.4	12.0	9.6	7.6	12.8	12.2	7.29	14.93	
Dir	NNW	W	W	W	W	W	NE	NNW	WNW	WNW	NW	NNW	N	NNW	WNW	NW	NW	WNW	W	SW	WSW	WSW	SW	SW	WNW	W	
3 Spd	7.8	5.0	7.1	3.5	3.0	7.2	0.1	0.0	2.5	10.1	15.5	19.7	19.8	19.6	16.6	14.4	8.5	8.5	3.7	3.6	3.3	1.2	6.0	17.8	4.18	19.80	
Dir	WSW	W	WSW	SW	SSW	W	NNW	E	SSE	ESE	ESE	SE	SE	SE	SSE	SSE	SSE	E	ENE	NE	ESE	E	W	WNW	SSE	SE	
4 Spd	15.2	12.8	10.7	7.7	14.0	10.8	10.2	13.0	16.3	16.5	14.0	12.8	10.4	10.1	10.4	12.5	13.6	10.5	13.1	16.7	25.0	24.3	7.3	2.4	10.70	24.96	
Dir	NW	NW	NW	WNW	W	W	W	WNW	NW	NNW	NNW	NNW	N	N	N	N	N	N	NW	W	W	W	W	WSW	NW	W	
5 Spd	10.7	7.1	8.2	10.9	11.0	10.6	12.7	14.2	14.8	15.0	15.4	14.9	15.5	17.0	15.5	13.0	11.6	8.1	7.8	2.3	2.4	4.1	1.1	2.4	9.28	16.97	
Dir	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNE	E	SSE	W	WSW	NW	NW	NW	
6 Spd	2.5	4.0	2.9	1.6	1.2	1.4	4.4	5.6	7.2	11.7	19.2	21.3	18.8	20.2	18.4	18.6	18.8	18.8	16.6	14.3	10.6	11.9	17.2	18.7	10.98	21.27	
Dir	WSW	SW	WNW	W	NE	ESE	ESE	ESE	ESE	E	ESE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	SE	SE	SE	SE	
7 Spd	20.3	10.0	6.2	4.7	4.6	7.1	11.4	11.7	11.3	12.7	14.4	14.4	17.6	18.3	17.5	15.0	16.0	19.0	18.6	15.1	12.3	12.2	13.4	17.4	12.45	20.27	
Dir	SE	SE	ESE	ESE	ESE	ESE	ESE	E	ESE	ENE	NE	ENE	SE	ESE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	
8 Spd	21.2	21.0	23.3	23.3	24.5	23.0	25.8	23.2	24.8	27.3	28.4	30.5	27.9	27.1	27.9	26.4	19.5	12.9	14.9	12.5	19.0	14.7	11.7	6.2	19.78	30.50	
Dir	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	ESE	ESE	ESE	E	E	E	E	E	S	SW	SSW	ESE	SE	
9 Spd	6.5	0.8	13.3	4.9	7.3	12.4	7.3	12.5	13.2	16.2	18.1	22.7	29.2	32.3	33.0	39.4	37.6	37.4	34.6	26.9	25.7	28.4	24.8	27.2	20.42	39.40	
Dir	SSW	SSE	SW	NW	SSW	SW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
10 Spd	19.0	14.7	11.2	18.4	16.7	15.7	16.5	16.5	15.7	14.9	15.7	15.1	13.3	12.2	11.7	7.1	3.3	3.9	8.8	8.7	9.1	7.4	8.3	7.6	9.43	19.04	
Dir	W	W	N	NNE	N	N	N	N	NNW	NNW	N	N	N	N	N	NNE	NE	N	NW	WNW	W	W	W	W	NNW	W	
11 Spd	8.8	8.4	9.9	14.3	13.6	14.0	11.3	10.5	10.1	7.0	5.1	5.4	5.4	2.9	4.5	4.9	4.8	2.6	1.9	3.1	3.5	2.9	2.2	2.2	4.64	14.26	
Dir	W	W	W	WNW	NNW	N	N	N	N	N	NNW	WNW	NNW	WNW	N	NNE	NNE	NNE	NE	NNE	NE	SE	SSE	ESE	NNW	WNW	
12 Spd	2.4	5.5	7.1	4.2	5.9	6.3	9.9	7.1	12.5	10.4	11.7	12.6	11.5	8.4	8.6	8.4	10.1	6.1	5.2	2.6	2.2	4.7	2.9	3.1	5.08	12.62	
Dir	ESE	ESE	E	ESE	ESE	ESE	S	S	S	SSE	SSE	SSE	S	SSE	SSE	SE	SSE	SW	NW	ENE	NW	N	NE	ESE	SSE	SSE	
13 Spd	11.5	12.4	5.0	5.1	7.7	5.5	10.6	8.2	9.4	7.7	8.5	9.3	4.2	4.3	7.2	3.7	2.1	1.7	5.0	6.2	7.2	9.9	10.7	8.0	3.13	12.41	
Dir	NNW	NNE	NNE	NNW	W	NW	NW	NW	NW	NNW	NW	NNW	NW	SSW	SSE	WSW	SW	WSW	E	S	SSW	SSW	SSW	WSW	WNW	NNE	
14 Spd	5.3	5.7	2.2	5.2	6.4	5.0	12.7	10.0	9.2	9.0	9.1	12.7	16.3	13.0	10.4	9.5	10.8	12.7	9.1	9.4	10.2	12.4	13.6	10.5	8.35	16.29	
Dir	WSW	W	SSE	SW	WSW	WSW	W	WNW	NW	NW	NW	WNW	NW	NW	WNW	NW	NNW	NNW	NNW	NW	NW	WNW	WNW	W	WNW	NW	
15 Spd	12.2	14.8	12.2	12.6	10.6	10.7	13.5	14.4	10.3	10.3	10.8	10.6	4.6	4.4	5.5	9.6	8.9	10.7	11.2	12.3	11.9	13.3	17.7	16.7	2.09	17.72	
Dir	W	W	W	W	W	W	W	WNW	WNW	NNW	NNW	NNW	N	NNE	NE	ENE	NE	NE	E	ESE	ESE	ESE	ESE	ESE	NNW	ESE	
16 Spd	14.3	18.3	15.0	6.8	1.2	3.8	11.6	11.0	12.8	14.2	15.1	14.1	10.7	9.4	6.6	3.4	3.6	14.7	4.9	5.6	2.8	7.9	5.5	8.3	3.50	18.26	
Dir	ESE	SE	SE	ESE	SSE	W	W	WNW	WNW	NW	NNW	NNW	NNW	NNW	NW	NW	WSW	W	NW	WNW	SSW	WSW	WSW	W	WNW	SE	
17 Spd	8.0	12.3	13.6	12.1	15.4	14.7	19.1	19.7	21.0	22.8	22.6	25.7	24.9	17.0	13.8	11.9	6.8	6.6	0.8	7.6	2.2	3.6	1.1	2.5	11.21	25.72	
Dir	WNW	W	W	W	W	W	W	W	WNW	WNW	WNW	W	W	WNW	WNW	NW	NNW	NNW	WNW	S	ESE	SE	SW	SW	WNW	W	
18 Spd	3.6	5.2	9.0	11.9	8.8	5.2	7.9	6.1	2.8	10.0	13.0	7.8	9.5	15.0	9.6	2.5	7.3	6.8	6.9	6.5	12.5	15.3	10.6	1.9	2.09	15.29	
Dir	SE	SW	WSW	W	W	WNW	W	NW	WNW	WSW	WSW	SW	NW	NE	E	E	NE	ENE	ENE	NE	NNE	NNE	NNE	S	NNW	NNE	
19 Spd	5.0	6.9	6.9	5.5	4.0	3.5	5.2	1.7	4.2	10.9	12.1	1.5	14.9	8.2	7.4	11.5	14.1	13.4	11.2	14.4	11.2	12.3	16.0	14.5	5.29	15.98	
Dir	WSW	WSW	WSW	W	W	WSW	W	NNW	ENE	ENE	ENE	SE	ENE	E	SSE	SE	E	ENE	SE	SE	SE	SE	SE	ESE	ESE	SE	
20 Spd	17.8	12.4	12.8	13.9	9.2	7.5	3.1	10.2	12.9	11.0	8.2	5.4	6.1	9.0	10.9	12.1	8.4	29.9	12.8	9.4	9.9	9.7	11.5	19.6	2.15	29.86	
Dir	SE	ESE	ESE	ESE	ESE	ESE	WSW	W	NW	NW	NNW	N	N	NE	E	ESE	NW	WNW	WNW	W	W	WSW	WSW	W	WNW	WNW	
21 Spd	17.2	17.3	20.2	21.0	21.3	18.4	22.9	23.7	24.5	30.4	29.8	29.1	32.5	30.6	29.1	30.4	31.0	27.6	24.9	27.5	25.3	22.8	20.5	27.1	24.78	32.51	
Dir	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	
22 Spd	27.4	26.2	25.7	24.4	24.1	22.8	22.7	25.7	26.0	23.5	23.7	25.3	23.5	22.4	21.4	21.8	21.8	19.4	15.1	12.0	6.9	0.9	3.5	4.6	18.32	27.36	
Dir	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	N	N	NNW	SW	SW	NW	WNW



WCAS - Meadows
Summary of Hourly Averages

Wind Speed (WS) - kph
June 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	6.4	6.5	6.8	7.7	6.9	8.3	11.3	15.0	16.4	14.7	13.7	13.4	12.7	12.7	9.4	7.4	8.0	6.0	5.8	3.2	2.3	1.5	8.7	7.2	6.72	16.40	
Dir	WSW	WSW	WSW	W	WNW	W	W	WNW	WNW	NW	NNW	NNW	N	N	NNW	NW	N	NNW	NE	NNE	NNW	WNW	W	WSW	NW	WNW	
24 Spd	8.1	7.1	7.4	11.3	11.3	7.9	11.3	10.2	9.0	7.5	5.7	7.5	8.7	9.3	10.1	9.2	9.6	7.4	4.3	5.5	5.5	7.0	5.8	5.7	2.92	11.33	
Dir	W	WSW	W	W	W	W	W	W	WNW	NW	NW	NNW	NNW	NNW	NW	NE	ENE	ENE	ENE	ESE	ESE	ESE	SE	ESE	NW	W	
25 Spd	0.6	2.1	1.5	1.1	3.9	8.3	8.0	8.1	12.5	13.8	20.3	21.8	21.4	22.0	20.9	23.1	23.5	26.1	24.7	24.0	22.3	19.2	18.5	18.9	14.97	26.07	
Dir	W	ENE	SE	SSE	ESE	ESE	E	E	ESE	SE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	SE	SE	
26 Spd	18.1	13.4	10.6	12.8	12.1	10.6	11.7	11.2	9.4	9.7	8.2	9.3	6.4	6.3	5.2	6.1	5.5	4.4	10.8	5.4	7.1	29.2	15.7	20.2	4.03	29.25	
Dir	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	SSE	SSE	SSE	NE	NE	NE	NE	NE	ENE	ENE	ENE	NW	NW	NW	NW	NW	E	NW	
27 Spd	20.8	22.8	21.5	24.0	16.4	17.1	17.0	27.4	30.6	26.7	19.0	27.2	24.2	27.2	16.4	8.5	21.0	20.2	25.0	27.4	24.6	17.8	16.9	22.0	20.97	30.61	
Dir	WNW	WNW	WNW	WNW	WNW	W	W	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	NNW	NW	WNW	WNW	W	W	W	WSW	WSW	WNW	WNW	
28 Spd	21.5	17.5	17.0	28.0	32.6	35.7	30.8	32.6	33.3	28.6	24.0	21.8	21.8	18.5	17.4	15.1	13.5	9.9	7.9	5.4	9.8	7.7	7.3	6.8	17.24	35.71	
Dir	WSW	WSW	W	W	W	WSW	W	W	W	WNW	WNW	WNW	NW	NW	NW	NNW	NW	NNW	NW	NW	NW	W	W	WNW	WNW	WSW	
29 Spd	7.5	5.5	5.3	5.2	5.8	6.7	8.2	11.1	12.2	11.3	11.9	8.9	7.7	7.0	10.1	9.3	9.2	6.5	7.7	7.6	8.3	11.7	8.2	6.9	6.33	12.23	
Dir	NNW	N	SW	WSW	WSW	WSW	W	WSW	W	WSW	W	WNW	NNW	NW	W	WNW	NW	WNW	WSW	SSW	S	SSW	SSW	WNW	W	W	
30 Spd	6.7	7.9	6.7	5.8	5.9	6.3	6.8	8.9	15.8	12.8	14.7	16.0	12.4	12.1	10.8	10.3	9.3	8.0	7.2	7.1	3.5	3.6	7.2	6.1	5.28	16.03	
Dir	SW	W	W	WSW	SW	SW	WSW	WNW	W	NW	WNW	WNW	WNW	NW	NNW	NNW	NNW	N	NNE	NNE	E	E	ESE	E	NW	WNW	
Spd	4.06	4.27	4.68	5.75	5.73	4.99	5.83	7.58	7.65	6.75	5.59	5.54	5.09	4.04	2.68	2.14	3.37	3.92	2.14	1.54	1.46	3.29	3.88	4.07	Diurnal Average		
Dir	WSW	W	W	W	W	W	W	WNW	WNW	NW	NW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	W	WSW	WSW	WSW	Diurnal Maximum		
Spd	27.36	26.19	25.68	27.99	32.62	35.71	30.76	32.63	33.28	30.44	29.82	30.50	32.51	32.33	33.01	39.40	37.60	37.40	34.61	27.52	25.72	29.25	26.99	27.21	Diurnal Maximum		
Dir	288.42	285.90	286.77	276.93	266.68	252.96	260.03	267.52	276.38	296.36	294.01	125.29	291.19	269.89	270.37	269.76	271.22	267.24	266.86	307.51	272.80	325.51	279.99	271.74			
Maximum Speed Value: 39.4 kph on Jun 9 16:00																			Minimum Speed Value: 0.0 kph on Jun 3 08:00					Hours in Service: 720			
Maximum Daily Speed Average: 24.78 kph on Jun 21																			Minimum Daily Speed Average: 2.09 kph on Jun 11					Hours of Data: 720			
Maximum Diurnal Speed Average: 7.65 kph at hour 9																			Minimum Diurnal Speed Average: 1.46 kph at hour 21					Hours of Missing Data: 0			
Monthly Average Velocity: 3.865 kph 292.15 deg																			Speed Percentiles: P ₁ = 1.1 P ₁₀ = 3.8 Q ₁ = 6.9 Median = 10.7 Q ₃ = 16.3 P ₉₀ = 23.9 P ₉₉ = 32.8					Percent Operational Time: 100.0			
All monthly, daily, and diurnal averages have been calculated using vector methods																											
Frequency Distribution																											
	Speed Range (kph)																										
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																				
North	10	30	27	0	0	0	67																				
NorthEast	15	24	9	0	0	0	48																				
East	16	27	24	8	0	0	75																				
SouthEast	14	13	44	28	2	0	101																				
South	9	15	4	0	0	0	28																				
SouthWest	15	23	8	1	0	0	47																				
West	14	76	51	42	17	1	201																				
NorthWest	11	58	49	28	7	0	153																				
Total	104	266	216	107	26	1	720																				



WCAS - Meadows
Summary of Hourly Averages

Relative Humidity (RH) - %
June 2017

Maximum Value: 97.64 % on Jun 29 05:00																								Maximum Daily Average: 90.42 % on Jun 9																								Hours in Service: 720	
Minimum Value: 23.9 % on Jun 17 18:00																								Minimum Daily Average: 47.06 % on Jun 21																								Hours of Data: 720	
Maximum Diurnal Average: 79.56 % at hour 6																								Minimum Diurnal Average: 46.89 % at hour 16																								Hours of Missing Data: 0	
Monthly Average: 63.366 %																								Percentiles: P ₁ = 26.3 P ₁₀ = 37.3 Q ₁ = 48.5 Median = 64.5 Q ₃ = 78.0 P ₉₀ = 87.5 P ₉₉ = 95.7																								Hours of Calibration: 0	
																								Percent Operational Time: 100.0																									
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jun	66.6	82.3	85.9	79.0	80.9	89.9	92.1	90.4	79.1	68.2	69.9	64.5	62.9	55.4	49.5	44.1	58.9	73.5	68.6	67.5	73.2	75.6	82.1	83.7	72.66	92.14																							
2-Jun	81.4	84.5	93.0	94.5	94.8	96.5	95.7	94.8	88.1	85.1	76.3	68.8	65.5	56.3	62.0	65.7	64.2	67.2	68.3	66.0	73.5	79.8	81.1	78.8	78.41	96.48																							
3-Jun	76.3	73.8	73.9	77.5	76.6	75.7	64.5	58.0	49.0	57.6	58.6	46.8	36.9	38.8	34.0	32.1	32.8	37.8	53.6	54.5	57.7	65.4	81.1	61.9	57.29	81.15																							
4-Jun	60.0	63.1	65.5	71.2	78.1	70.9	68.9	63.4	54.4	49.2	47.5	48.2	49.7	50.7	47.4	48.8	47.4	48.7	53.5	56.2	66.8	74.7	75.4	78.0	59.91	78.13																							
5-Jun	76.8	84.2	82.2	76.4	78.9	79.9	78.1	73.5	63.2	55.8	46.5	43.2	38.7	31.6	28.8	26.4	26.3	26.4	25.9	28.3	38.0	54.6	54.0	70.1	53.67	84.23																							
6-Jun	76.3	66.3	64.0	65.3	62.1	61.0	61.7	52.3	50.4	50.1	40.7	28.4	30.8	31.5	30.4	30.2	32.6	33.7	35.5	41.6	51.8	57.1	49.8	52.0	48.15	76.26																							
7-Jun	54.9	59.9	64.3	67.8	74.2	74.4	66.6	61.9	55.2	54.3	53.1	48.9	44.8	42.9	40.6	40.7	38.3	36.0	34.8	44.6	50.3	54.7	56.7	54.9	53.12	74.43																							
8-Jun	53.5	53.9	54.1	55.5	58.0	57.4	55.9	55.5	52.6	47.1	42.9	36.3	34.4	34.2	34.2	36.0	39.6	43.9	41.6	42.9	42.2	54.1	82.0	83.7	49.65	83.73																							
9-Jun	88.0	88.8	92.3	90.1	92.8	96.3	95.7	91.8	87.5	86.9	86.0	85.2	86.1	91.7	91.9	90.9	91.7	90.8	90.2	90.9	91.2	90.3	90.2	92.9	90.42	96.29																							
10-Jun	94.7	95.5	94.7	89.6	86.6	85.1	83.4	83.5	82.6	79.1	70.5	63.5	58.6	53.9	52.5	50.0	44.7	48.6	50.8	53.5	67.4	76.4	75.3	70.8	71.30	95.55																							
11-Jun	74.1	71.7	74.1	75.4	75.9	85.4	89.5	92.8	92.2	85.3	77.3	75.1	72.3	69.9	69.5	69.1	68.1	68.3	70.3	72.6	75.6	78.8	83.6	85.4	77.18	92.83																							
12-Jun	87.5	91.5	94.0	93.1	93.4	93.3	83.4	77.6	67.9	61.8	59.1	57.2	53.0	48.0	45.8	42.7	43.8	49.0	60.4	60.9	67.7	64.5	66.6	72.3	68.10	93.97																							
13-Jun	76.3	77.2	73.8	79.3	81.6	79.8	75.8	68.2	63.6	61.6	56.4	58.1	61.6	63.8	76.8	70.0	58.5	46.3	54.0	75.1	77.4	79.5	79.0	79.4	69.72	81.62																							
14-Jun	84.3	83.9	81.1	85.1	87.2	85.8	88.1	83.8	74.2	74.4	72.7	71.6	77.1	82.5	82.1	79.0	77.8	77.3	78.0	78.1	78.9	85.7	86.7	91.1	81.11	91.11																							
15-Jun	92.6	92.8	94.1	92.8	95.6	93.9	84.6	75.0	68.0	59.9	54.3	51.0	46.8	46.0	43.9	42.6	38.7	39.2	43.0	54.3	61.3	68.8	76.0	79.8	66.46	95.62																							
16-Jun	84.4	82.9	81.5	85.5	88.4	91.3	83.2	70.5	64.0	59.3	53.9	52.5	53.2	51.7	50.0	44.7	43.5	78.4	66.5	80.3	79.8	84.7	88.7	86.0	71.03	91.28																							
17-Jun	80.7	83.4	81.7	78.4	79.2	77.5	67.1	58.0	49.6	39.3	34.5	30.3	27.8	28.3	27.3	26.5	25.1	23.9	24.2	33.6	41.0	53.4	59.6	61.4	49.66	83.43																							
18-Jun	66.8	70.3	70.6	72.0	69.2	63.2	64.2	49.8	38.3	37.4	31.0	28.2	41.3	64.5	50.5	37.1	37.9	38.5	45.2	49.8	53.1	50.8	51.4	62.9	51.82	72.04																							
19-Jun	74.9	80.0	76.7	80.8	81.4	72.3	64.1	54.4	55.1	54.1	50.9	38.3	38.1	37.1	37.1	37.2	37.8	42.2	43.7	42.6	47.6	50.8	52.9	60.7	54.61	81.38																							
20-Jun	58.9	64.8	69.2	74.0	78.7	72.3	67.8	69.1	69.1	64.7	57.1	52.2	47.2	45.9	45.6	50.0	61.3	91.8	86.4	84.1	85.8	89.4	87.8	78.9	68.84	91.76																							
21-Jun	76.1	76.1	70.7	63.1	62.3	58.2	52.6	47.5	42.6	35.4	32.5	31.2	28.2	28.3	29.0	29.4	29.0	31.6	36.8	41.9	48.0	53.8	61.4	63.7	47.06	76.13																							
22-Jun	77.4	85.0	87.8	90.0	88.7	86.6	81.8	72.2	63.7	59.9	57.9	49.5	43.9	40.8	38.9	37.8	37.2	37.3	39.2	41.3	45.0	55.5	74.1	76.3	61.16	90.01																							
23-Jun	80.6	77.0	81.1	82.0	79.0	72.3	71.4	65.7	59.8	56.8	51.1	44.9	42.1	45.2	41.9	34.5	36.8	34.9	36.7	40.3	48.0	60.4	71.1	75.5	57.88	82.01																							
24-Jun	74.0	76.3	75.4	77.0	75.2	83.4	77.0	65.1	57.9	55.2	47.6	41.5	39.4	36.8	34.4	41.6	41.1	38.9	37.3	42.2	54.9	64.0	70.1	72.7	57.46	83.42																							
25-Jun	76.8	75.9	76.3	77.6	80.1	87.3	83.4	76.4	63.5	52.8	51.8	45.0	39.5	34.6	35.8	39.1	37.1	36.0	39.5	42.3	47.3	54.3	61.9	65.7	57.51	87.32																							
26-Jun	62.7	63.8	66.1	59.6	63.6	65.5	63.1	58.5	56.5	54.3	51.7	55.8	52.8	49.1	42.0	42.6	40.7	41.2	44.3	60.7	65.9	76.1	84.6	86.1	58.64	86.14																							
27-Jun	82.4	73.6	74.7	75.9	72.3	77.5	67.1	62.2	59.1	74.3	71.8	54.1	47.8	46.6	54.0	62.5	72.9	65.7	62.8	66.7	64.9	66.1	67.7	65.3	66.16	82.36																							
28-Jun	70.4	69.2	66.1	73.8	78.4	82.3	79.2	78.4	77.1	82.4	85.3	89.5	90.0	87.1	83.7	80.1	79.3	78.1	80.4	77.3	81.5	90.2	92.1	90.6	80.95	92.13																							
29-Jun	90.9	92.0	95.1	97.0	97.6	96.8	91.8	86.1	75.9	67.5	63.7	58.7	52.6	46.6	37.5	38.8	38.8	37.2	34.9	44.1	54.9	63.8	64.8	67.0	66.41	97.64																							
30-Jun	72.3	67.5	74.6	74.1	74.5	74.9	69.2	61.0	55.7	52.7	48.2	40.0	39.5	38.8	39.6	36.5	35.4	34.3	37.4	40.0	46.7	60.1	68.9	70.6	54.69	74.90																							
																								Diurnal Average																									
																								Diurnal Maximum																									



WCAS - Meadows
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
June 2017

Maximum Value: 18.95 kph on Jun 20 17:00	Maximum Daily Average: 5.60 kph on Jun 27	Hours in Service: 720
Minimum Value: 0.5 kph on Jun 23 00:00	Minimum Daily Average: 2.21 kph on Jun 24	Hours of Data: 720
Maximum Diurnal Average: 4.27 kph at hour 17	Minimum Diurnal Average: 2.61 kph at hour 6	Hours of Missing Data: 0
Monthly Average: 3.280 kph	Percentiles: $P_1 = 0.8$ $P_{10} = 1.5$ $Q_1 = 2.1$ Median = 2.9 $Q_3 = 4.1$ $P_{90} = 5.5$ $P_{99} = 8.4$	Hours of Calibration: 0
		Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	4.0	3.4	3.2	3.7	4.3	1.9	4.1	3.1	1.9	2.1	2.7	2.4	2.3	1.6	1.9	2.7	3.1	2.4	1.9	3.2	2.4	10.9	4.9	5.8	3.33	10.87
2-Jun	4.2	4.5	2.8	2.3	2.5	2.8	2.6	1.8	2.9	2.3	2.3	2.2	2.3	3.5	8.4	5.1	2.3	9.0	2.0	2.3	2.5	1.3	3.6	6.3	3.42	9.01
3-Jun	1.9	2.3	1.5	2.2	1.7	2.1	1.2	1.3	2.3	2.5	3.5	3.5	4.3	4.0	4.3	4.6	2.5	2.0	1.7	1.0	1.3	1.4	5.0	4.1	2.59	4.99
4-Jun	4.2	3.6	2.7	1.5	1.9	2.4	2.5	3.1	3.7	3.8	3.2	2.6	2.6	2.5	2.7	3.6	3.3	2.7	3.8	5.8	3.8	8.3	2.4	3.6	3.35	8.31
5-Jun	3.4	2.5	2.1	3.0	2.0	2.5	2.8	3.2	3.4	4.0	3.7	4.2	3.8	4.1	3.8	3.4	3.3	2.7	2.1	1.1	0.5	1.0	1.3	1.5	2.72	4.17
6-Jun	1.9	3.7	1.0	1.4	1.5	1.7	1.7	2.9	2.3	3.5	4.7	4.5	5.8	5.0	5.5	4.6	4.1	4.1	4.0	2.0	1.8	1.8	2.6	2.4	3.10	5.82
7-Jun	2.5	6.5	4.3	4.5	2.8	1.6	3.1	2.2	2.6	2.6	2.7	3.4	4.0	3.9	3.9	4.1	3.8	3.8	3.8	2.1	1.9	1.5	3.1	2.8	3.23	6.47
8-Jun	3.5	2.7	2.7	2.7	2.4	3.1	4.0	4.0	3.9	4.0	4.4	5.4	5.2	5.7	5.2	4.7	2.9	2.6	2.5	2.2	3.7	7.8	3.3	3.6	3.83	7.81
9-Jun	5.4	1.9	4.0	2.2	2.3	2.4	2.5	2.1	2.4	3.1	5.2	4.5	6.3	5.3	5.9	5.7	5.9	5.6	5.4	4.5	4.8	4.6	4.2	4.4	4.20	6.26
10-Jun	3.4	2.3	5.5	4.1	4.2	4.6	4.3	4.2	3.6	3.3	4.2	3.9	3.4	3.1	3.5	2.2	2.9	2.9	2.8	2.4	1.1	0.9	1.0	0.8	3.12	5.52
11-Jun	1.3	2.6	5.0	2.9	3.5	3.4	2.8	4.1	3.2	2.5	2.0	2.2	2.5	2.2	1.5	2.3	2.0	1.7	1.3	2.4	1.3	1.8	1.2	1.1	2.38	5.04
12-Jun	1.5	2.0	1.7	1.5	1.7	2.5	3.3	3.3	4.3	3.9	3.8	3.6	3.5	3.1	4.1	4.4	2.7	5.2	5.5	1.6	2.0	3.5	3.1	4.2	3.16	5.47
13-Jun	3.8	5.2	4.0	3.0	3.9	4.2	3.6	2.0	2.1	2.0	2.1	2.2	1.9	2.6	3.0	1.2	1.3	1.7	3.7	1.5	2.1	2.1	3.0	2.2	2.69	5.19
14-Jun	0.8	1.7	1.9	2.8	2.1	2.6	1.7	2.8	1.6	2.2	2.5	2.7	3.4	4.0	2.6	2.6	3.4	2.8	2.6	2.5	2.7	2.5	3.1	1.4	2.46	4.05
15-Jun	1.8	1.8	1.4	1.7	1.2	1.8	2.2	2.9	2.9	3.3	2.7	2.4	2.9	2.3	2.6	3.0	2.6	1.9	2.2	1.7	1.5	2.2	2.7	2.4	2.25	3.31
16-Jun	2.0	3.4	3.4	1.1	1.2	1.1	3.1	2.3	2.8	3.7	3.5	3.7	2.6	2.9	2.6	2.7	9.9	14.6	3.9	3.0	2.5	4.1	1.7	1.8	3.48	14.59
17-Jun	2.2	1.3	1.7	2.2	1.8	3.3	2.3	3.4	4.4	5.7	4.8	5.7	5.9	4.9	4.5	3.1	2.4	2.4	2.1	1.9	1.8	2.2	1.1	1.6	3.03	5.91
18-Jun	3.1	2.1	2.2	1.5	3.8	2.7	2.5	2.0	1.7	4.3	3.5	4.9	10.6	6.6	3.7	2.2	2.3	2.6	1.1	1.2	4.4	3.3	3.0	1.2	3.18	10.61
19-Jun	1.2	1.0	1.0	1.0	1.3	1.5	1.0	1.5	2.0	3.2	3.4	4.6	2.7	4.3	3.6	3.6	2.6	2.7	3.1	2.9	1.9	2.4	2.9	2.3	2.40	4.62
20-Jun	3.4	2.4	2.6	3.6	2.0	2.1	1.4	3.2	4.1	3.0	3.2	2.7	2.1	2.5	2.4	3.0	18.9	8.1	6.4	2.2	1.6	2.1	4.0	2.3	3.71	18.95
21-Jun	2.5	1.9	2.6	3.5	3.5	2.9	4.0	5.1	6.0	7.2	7.2	6.3	7.5	7.6	7.0	8.2	7.0	8.1	6.1	6.8	5.7	5.6	4.9	6.2	5.56	8.19
22-Jun	6.0	4.9	5.6	4.9	4.7	4.5	5.7	6.4	6.2	5.7	6.3	6.3	5.7	5.4	5.2	5.3	5.1	5.1	4.1	3.2	2.7	1.8	1.7	0.5	4.70	6.45
23-Jun	1.3	2.0	1.1	1.1	2.0	2.7	2.9	3.7	4.0	3.5	3.7	3.3	3.4	4.6	2.6	3.3	6.3	1.8	2.3	2.5	1.8	2.0	3.1	1.9	2.79	6.35
24-Jun	0.9	1.8	2.3	3.6	4.1	1.6	1.9	2.1	2.5	2.4	2.3	2.7	4.3	2.9	3.3	3.0	2.1	2.2	1.3	1.6	1.0	1.4	0.8	0.8	2.21	4.28
25-Jun	1.6	2.0	1.5	1.3	3.3	1.3	1.7	1.8	2.4	2.8	3.4	3.9	4.8	4.7	4.7	4.9	4.8	4.9	4.9	4.6	3.8	3.1	2.8	2.3	3.22	4.91
26-Jun	2.4	2.3	2.3	1.9	1.7	1.8	2.4	2.6	2.7	2.7	2.8	4.5	3.6	1.8	2.4	1.8	3.6	2.9	1.8	8.4	11.6	7.2	6.4	5.1	3.62	11.62
27-Jun	4.9	5.3	4.4	7.2	5.3	5.1	4.5	6.8	6.8	7.7	4.6	6.2	5.8	7.8	5.8	6.2	8.0	6.1	5.7	5.5	4.1	4.0	3.6	3.0	5.60	8.00
28-Jun	3.9	2.8	4.4	7.9	6.0	5.2	4.7	4.8	7.0	6.3	5.5	5.2	5.6	4.4	4.0	4.2	3.9	5.0	3.0	3.0	2.7	1.2	1.2	1.5	4.31	7.88
29-Jun	2.0	2.0	1.5	0.8	0.9	0.7	2.6	1.7	2.3	3.0	3.5	3.5	2.3	3.0	4.1	4.1	2.7	2.9	2.8	1.6	1.4	1.3	3.4	2.3	2.35	4.15
30-Jun	2.3	1.5	1.3	1.0	1.4	2.5	1.8	3.0	2.9	3.0	3.7	3.6	3.9	3.9	3.5	2.5	2.4	2.5	1.8	2.2	1.0	2.5	1.7	1.8	2.40	3.94

2.77	2.77	2.72	2.74	2.70	2.61	2.83	3.11	3.37	3.65	3.71	3.90	4.18	4.01	3.95	3.74	4.27	4.10	3.18	2.91	2.71	3.20	2.89	2.71			Diurnal Average
5.98	6.47	5.58	7.88	6.03	5.18	5.73	6.76	6.98	7.66	7.18	6.32	10.61	7.83	8.35	8.19	18.95	14.59	6.39	8.43	11.62	10.87	6.38	6.35			Diurnal Maximum

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- μm^3 24-hr 100 μm^3

WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
CONTINUOUS AIR MONITORING DATA**

**AMS 959
WAGNER2
JUNE 2017**

Operations and Data Collection by:
West Central Airshed Society
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:
West Central Airshed Society
Drayton Valley, Alberta

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

TransAlta / Wagner2 Station 959												June 2017		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)
							P10	Q1	Median	Q3	P90	1-hour	24-hour	
SO ₂ (ppb)	33	668	97.4	2.2	0.0	28.8	0.0	0.2	0.6	2.0	7.2	0	0	0.007
NO (ppb)	34	666	97.2	1.7	0.0	39.3	0.0	0.1	0.3	1.6	5.3	-	-	-
NO ₂ (ppb)	34	666	97.2	4.8	0.7	29.2	1.1	2.0	3.5	6.1	9.9	0	0	0.008
NO _x (ppb)	34	666	97.2	6.6	0.7	59.0	1.3	2.1	4.1	7.9	15.0	-	-	-
Wind Speed (kph)	0	701	97.4	5.1	0.0	17.2	0.6	1.3	4.2	7.8	11.4	-	-	-
Temperature (°C)	0	670	93.1	16.3	5.4	29.6	10.1	12.6	15.5	20.0	23.6	-	-	-
Relative Humidity (%)	0	701	97.4	62.0	19.8	102.0	31.7	41.8	61.3	82.5	93.9	-	-	-
Std Dev Wind Direction (deg)	0	701	97.4	48.0	9.3	101.2	22.8	30.6	41.0	65.5	83.1	-	-	-
Std Dev Wind Speed (kph)	0	701	97.4	3.0	0.2	10.5	0.9	1.4	2.7	4.1	5.4	-	-	-



WCAS - Wagner2
Summary of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
June 2017

Maximum Value: 28.79 ppb on Jun 21 08:00	Maximum Daily Average: 7.48 ppb on Jun 21	Hours in Service: 720
Minimum Value: 0.0 ppb on Jun 1 12:00	Minimum Daily Average: 0.21 ppb on Jun 10	Hours of Data: 668
Maximum Diurnal Average: 4.17 ppb at hour 13	Minimum Diurnal Average: 0.46 ppb at hour 23	Hours of Missing Data: 52
Monthly Average: 2.156 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.6 Q ₃ = 2.0 P ₉₀ = 7.2 P ₉₉ = 17.9	Hours of Calibration: 33
		Percent Operational Time: 97.4

Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	0.6	0.7	Z	0.3	0.6	0.1	0.1	1.8	7.9	21.0	4.3	0.0	12.1	5.9	4.9	9.5	10.4	1.4	0.2	0.2	0.2	0.0	0.6	2.1	3.69	20.98
2-Jun	0.2	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	1.8	8.9	7.9	8.5	0.0	0.5	0.0	0.0	2.8	1.1	0.5	0.2	0.1	0.4	0.2	1.44	8.90
3-Jun	0.2	0.1	Z	0.0	0.0	0.2	0.0	0.7	0.3	0.2	0.0	0.9	3.2	1.6	4.5	6.4	1.9	0.9	0.4	0.5	0.3	0.1	0.0	0.4	1.00	6.37
4-Jun	0.0	0.0	Z	0.2	0.1	0.5	0.3	0.0	0.1	0.4	0.0	0.3	0.0	0.5	0.9	1.2	1.3	1.3	1.5	2.7	1.5	1.6	1.5	1.9	0.78	2.65
5-Jun	1.2	1.5	Z	0.6	2.0	3.9	9.3	6.4	1.9	1.8	1.8	2.2	7.6	8.5	12.5	11.6	5.5	4.5	2.5	0.8	1.1	0.9	0.6	0.1	3.85	12.49
6-Jun	0.5	0.5	Z	0.5	0.8	0.9	1.0	0.9	1.6	3.2	0.8	1.7	2.5	1.9	2.7	2.8	1.0	0.4	0.3	0.3	0.2	0.3	0.2	0.0	1.08	3.17
7-Jun	0.2	0.2	Z	0.2	0.3	0.1	0.4	0.0	1.1	0.3	0.5	0.3	0.0	0.8	2.8	2.9	1.8	0.0	0.0	0.0	0.0	0.2	0.4	1.1	0.59	2.88
8-Jun	1.0	0.6	Z	1.2	1.0	1.3	1.1	1.7	2.0	2.2	1.7	2.0	1.9	1.9	1.2	1.5	1.9	1.9	2.0	1.7	1.5	1.5	1.7	1.7	1.57	2.17
9-Jun	0.8	1.0	Z	0.0	0.5	2.3	1.2	1.5	1.0	1.0	1.1	1.5	0.6	1.0	1.1	1.2	0.7	0.4	0.8	0.8	1.0	0.7	0.0	0.0	0.87	2.29
10-Jun	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.6	0.6	0.7	0.0	0.5	0.6	0.1	0.3	0.3	0.0	0.0	0.21	0.70
11-Jun	0.3	0.2	Z	2.6	0.0	0.0	0.0	0.0	0.1	0.1	0.2	8.0	7.5	5.4	4.3	8.9	8.1	10.0	11.2	2.6	0.7	0.5	0.4	0.3	3.11	11.24
12-Jun	0.3	0.3	Z	0.1	0.1	0.4	0.5	0.6	0.8	1.0	1.0	2.4	2.1	1.4	3.9	7.3	1.5	0.2	0.3	0.2	0.4	0.4	0.3	0.2	1.12	7.27
13-Jun	0.6	0.6	Z	0.3	0.3	0.2	0.1	0.3	0.3	0.4	0.4	0.2	0.3	0.2	0.4	0.3	0.3	0.7	1.4	0.9	1.4	0.7	0.8	0.2	0.48	1.42
14-Jun	0.2	0.1	Z	0.4	0.6	0.2	0.2	0.4	0.8	0.2	0.3	5.2	3.1	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.4	0.3	0.9	0.2	0.66	5.20
15-Jun	0.6	0.6	Z	4.6	1.8	1.1	4.1	4.3	1.5	0.9	11.2	13.5	7.6	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	13.50
16-Jun	PF	PF	PF	PF	PF	PF	PF	PF	11.7	0.0	0.0	0.0	0.0	0.0	3.2	1.9	0.0	4.4	2.9	0.0	0.6	0.5	0.4	0.2	--	11.75
17-Jun	0.4	0.0	Z	0.4	1.4	1.2	5.5	10.1	7.0	7.0	1.0	2.6	2.2	4.3	3.0	3.2	3.2	3.2	1.6	0.9	0.8	0.0	0.0	1.0	2.60	10.06
18-Jun	0.0	0.2	Z	0.2	0.5	0.1	0.2	0.6	0.7	3.4	2.1	0.0	0.0	0.0	0.0	6.1	13.9	8.0	4.5	2.4	1.5	0.0	0.0	0.0	1.93	13.88
19-Jun	0.0	0.0	Z	0.8	0.3	0.9	1.1	0.6	0.0	1.2	1.9	1.2	7.4	15.4	4.0	0.5	1.0	5.1	1.6	0.0	0.0	0.2	0.2	0.4	1.89	15.37
20-Jun	0.3	0.2	Z	1.1	1.3	0.8	0.2	3.0	10.9	0.2	0.7	17.6	19.9	13.0	11.2	4.7	3.0	8.6	1.5	0.5	0.7	0.4	0.4	0.4	4.37	19.93
21-Jun	0.1	3.2	Z	16.2	1.7	1.4	6.2	28.8	22.2	7.9	8.6	10.1	7.8	7.2	8.2	6.9	7.3	3.6	2.2	0.7	4.4	3.7	2.8	10.8	7.48	28.79
22-Jun	17.9	17.5	Z	6.6	6.6	9.9	1.9	0.0	0.1	0.0	0.0	0.0	0.1	1.3	0.9	0.2	0.2	0.3	0.2	0.3	0.5	0.4	0.1	0.5	2.83	17.87
23-Jun	0.7	0.4	Z	0.0	0.4	0.4	0.3	6.1	22.1	16.6	0.0	0.0	0.1	0.1	2.6	5.4	0.0	0.9	1.0	1.2	1.0	1.0	1.3	2.68	22.15	
24-Jun	0.5	0.1	Z	0.2	0.0	0.0	0.0	0.0	0.0	0.0	5.3	9.6	9.7	8.9	10.4	2.9	6.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0	2.66	10.40
25-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	2.6	2.9	3.1	0.6	1.1	0.0	0.2	0.0	0.2	0.0	0.0	0.47	3.14
26-Jun	0.0	0.0	Z	2.1	0.5	0.0	0.0	2.3	1.6	8.1	6.0	3.5	4.7	6.1	5.1	2.5	1.5	1.2	1.0	0.8	2.2	3.2	0.1	0.1	2.28	8.09
27-Jun	0.0	0.3	Z	9.2	10.0	2.0	1.6	13.2	18.0	6.3	15.8	C	C	C	C	8.2	4.5	11.6	5.1	9.1	0.0	0.0	0.0	0.1	6.05	18.02
28-Jun	0.0	0.7	Z	0.6	0.7	1.1	1.0	0.7	0.5	0.1	5.5	4.9	0.4	0.4	0.0	0.4	0.8	0.6	0.9	0.8	0.4	0.3	0.7	1.0	0.98	5.52
29-Jun	0.6	0.0	Z	0.2	0.1	0.2	0.6	0.7	0.8	0.3	1.3	4.1	7.1	2.5	0.1	0.7	0.6	0.5	0.7	0.0	0.0	0.0	0.0	0.0	0.93	7.15
30-Jun	0.0	0.2	Z	0.0	0.0	0.0	0.0	0.6	0.3	18.9	9.1	10.5	4.4	7.8	5.8	0.5	0.8	0.8	0.1	0.0	0.4	0.3	0.0	0.6	2.66	18.85

0.94	1.01	--	1.67	1.09	1.01	1.28	2.93	3.84	3.49	2.98	3.81	4.17	3.56	3.41	3.41	2.88	2.82	1.57	0.97	0.76	0.61	0.46	0.85	Diurnal Average	
17.87	17.51	--	16.18	9.99	9.88	9.32	28.79	22.20	20.98	15.79	17.59	19.93	15.37	12.49	11.58	13.88	11.58	11.24	9.12	4.44	3.67	2.77	10.85	Diurnal Maximum	

Z - zerospan C - Calibration PF - Power Failure
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



WCAS - Wagner2 Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb June 2017

Maximum Value: 39.27 ppb on Jun 2 11:00 Maximum Daily Average: 7.53 ppb on Jun 2																							Hours in Service: 720 Hours of Data: 666																									
Minimum Value: 0.0 ppb on Jun 1 23:00 Minimum Daily Average: 0.05 ppb on Jun 10																							Hours of Missing Data: 54 Hours of Calibration: 34																									
Maximum Diurnal Average: 4.03 ppb at hour 10 Minimum Diurnal Average: 0.30 ppb at hour 2																							Percent Operational Time: 97.2																									
Monthly Average: 1.744 ppb Percentiles: P₁ = 0.0 P₁₀ = 0.0 Q₁ = 0.1 Median = 0.3 Q₃ = 1.6 P₉₀ = 5.3 P₉₉ = 17.9																																																
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Jun	0.1	0.0	Z	0.1	0.1	0.1	0.2	1.2	6.4	19.0	2.3	0.2	7.3	2.4	1.9	3.2	2.8	0.3	0.2	0.2	0.1	0.0	0.0	0.0	2.10	19.03																						
2-Jun	0.0	0.0	Z	0.1	0.0	0.1	0.5	0.5	1.1	15.6	39.3	29.5	11.9	11.0	2.0	2.0	0.1	11.4	2.7	9.7	5.5	13.4	16.4	0.4	7.53	39.27																						
3-Jun	0.0	0.0	Z	0.0	0.3	0.9	1.4	2.5	2.2	1.7	0.4	0.5	1.3	0.6	1.7	2.0	0.4	0.3	10.0	30.1	0.1	0.0	0.0	0.0	2.46	30.11																						
4-Jun	0.0	0.0	Z	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.05	0.16																						
5-Jun	0.0	0.0	Z	0.1	0.1	0.9	5.2	3.4	0.3	0.3	0.2	0.4	3.7	3.6	6.0	5.6	2.1	1.7	0.6	0.2	0.5	0.0	0.2	0.2	1.54	5.95																						
6-Jun	0.2	0.6	Z	1.7	1.6	2.5	2.1	1.4	1.4	1.7	0.1	0.5	0.9	0.6	1.1	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	2.46																						
7-Jun	0.0	0.0	Z	0.0	0.0	0.2	0.7	1.0	1.4	0.8	0.7	0.4	0.2	0.4	2.0	1.2	0.9	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.44	1.96																						
8-Jun	0.0	0.0	Z	0.1	0.1	0.3	0.8	1.0	9.4	11.9	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	1.16	11.95																						
9-Jun	0.1	0.1	Z	0.2	0.1	0.1	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.33																						
10-Jun	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.05	0.14																						
11-Jun	0.0	0.0	Z	0.4	0.0	0.0	0.1	0.1	0.0	0.1	0.1	7.2	4.3	3.8	3.1	8.1	6.8	6.5	10.2	0.8	0.0	0.0	0.0	0.0	2.25	10.20																						
12-Jun	0.0	0.0	Z	0.2	0.1	0.5	1.7	2.2	0.9	0.3	0.3	1.2	0.9	0.5	2.3	3.8	0.5	0.0	0.2	0.1	0.1	0.2	0.0	0.0	0.70	3.75																						
13-Jun	0.0	0.0	Z	0.1	0.0	0.0	0.1	0.3	1.3	0.7	0.7	0.2	0.4	0.1	1.8	2.4	0.1	0.4	0.5	0.2	0.1	0.0	0.0	0.0	0.42	2.43																						
14-Jun	0.0	0.0	Z	0.1	0.1	0.5	1.2	2.8	3.0	6.8	11.1	6.2	4.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	1.61	11.09																						
15-Jun	0.0	0.1	Z	2.9	0.3	1.2	6.6	5.3	2.4	1.0	11.8	11.7	6.6	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	11.80																						
16-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.5	0.3	0.3	0.3	0.3	4.6	2.0	0.4	5.6	1.4	0.1	0.1	0.1	0.0	0.1	--	5.62																						
17-Jun	0.0	0.0	Z	0.1	0.8	1.2	4.1	8.1	6.4	5.6	0.6	1.1	1.0	1.9	1.4	2.0	2.6	2.9	1.1	0.5	0.2	0.0	0.0	0.0	1.81	8.09																						
18-Jun	0.0	0.0	Z	0.1	0.2	0.3	0.4	1.0	2.0	2.4	1.7	0.3	0.0	0.0	0.1	3.9	9.8	4.2	1.2	0.4	0.2	0.0	0.0	0.0	1.23	9.85																						
19-Jun	0.0	0.1	Z	0.2	0.4	0.9	1.9	2.2	1.0	1.2	1.5	0.5	5.5	9.2	1.5	0.3	0.4	2.3	0.4	0.1	0.0	0.0	0.0	0.0	1.29	9.23																						
20-Jun	0.0	0.0	Z	0.1	0.1	0.3	0.6	3.1	9.6	0.6	1.5	14.0	14.5	6.2	3.8	0.6	1.0	5.4	0.2	0.1	0.1	0.0	0.0	0.0	2.69	14.51																						
21-Jun	0.0	0.6	Z	4.9	0.1	0.2	3.7	18.1	13.0	3.8	4.8	5.2	4.0	3.7	4.9	3.5	3.5	1.5	1.6	0.2	1.2	1.0	0.2	1.6	3.53	18.05																						
22-Jun	3.9	5.8	Z	2.0	3.5	12.5	2.7	0.5	0.8	0.4	0.9	0.5	0.8	2.1	1.5	0.1	0.1	0.1	0.0	0.0	0.0	0.6	0.6	0.1	1.73	12.51																						
23-Jun	0.4	0.1	Z	0.1	0.2	0.7	1.7	6.4	20.7	20.5	0.8	0.3	11.4	4.5	0.5	1.6	3.6	0.1	0.0	0.0	0.1	1.8	1.6	1.8	3.43	20.73																						
24-Jun	0.2	0.2	Z	0.2	0.1	0.5	0.9	0.5	0.3	0.5	4.0	8.6	7.3	6.3	5.6	1.9	2.9	3.3	0.0	0.0	0.0	0.5	0.2	9.4	2.33	9.38																						
25-Jun	5.4	0.7	Z	0.3	0.1	0.6	0.7	1.0	1.0	0.5	0.1	0.1	0.2	1.2	1.6	1.6	0.5	0.8	0.3	0.3	0.3	0.3	0.2	0.2	0.79	5.41																						
26-Jun	0.1	0.0	Z	0.1	0.1	0.1	0.3	1.7	1.8	4.9	3.1	1.0	1.0	0.9	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.5	0.0	0.0	0.74	4.92																						
27-Jun	0.0	0.1	Z	3.7	4.5	0.2	0.5	11.9	14.9	4.8	9.6	C	C	C	C	C	1.5	7.2	2.2	3.3	0.0	0.0	0.0	0.0	3.58	14.90																						
28-Jun	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.1	0.1	0.1	3.5	4.5	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.39	4.51																						
29-Jun	0.0	0.2	Z	14.0	7.4	2.8	3.0	1.8	1.3	0.4	1.0	2.7	3.4	1.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.6	0.6	0.7	1.81	13.96																						
30-Jun	0.1	0.0	Z	0.1	0.1	0.4	1.8	1.1	0.6	14.4	7.1	5.9	2.2	3.9	2.9	0.4	0.2	0.2	0.1	0.1	0.3	1.0	0.2	0.6	1.89	14.40																						
																							0.37	0.30	--	1.10	0.71	0.97	1.50	2.75	3.58	4.03	3.61	3.56	3.25	2.32	1.82	1.71	1.42	1.90	1.16	1.64	0.32	0.70	0.72	0.53	Diurnal Average	
																							5.41	5.81	--	13.96	7.37	12.51	6.57	18.05	20.73	20.46	39.27	29.47	14.51	11.03	5.95	8.14	9.85	11.38	10.20	30.11	5.52	13.39	16.42	9.38	Diurnal Maximum	
Z - zerospan C - Calibration PF - Power Failure																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																

WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
METEOROLOGICAL DATA**

**AMS 959
WAGNER2
JUNE 2017**

Operations and Data Collection by:
West Central Airshed Society
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:
West Central Airshed Society
Drayton Valley, Alberta



WCAS - Wagner2 Summary of Hourly Averages

External Temperature (ET) - C June 2017

Maximum Value: 29.62 C on Jun 26 16:00																								Hours in Service: 720		
Maximum Daily Average: 21.47 C on Jun 26																								Hours of Data: 670		
Minimum Value: 5.4 C on Jun 19 05:00																								Hours of Missing Data: 50		
Minimum Daily Average: 12.41 C on Jun 9																								Hours of Calibration: 0		
Maximum Diurnal Average: 21.05 C at hour 17																								Percent Operational Time: 93.1		
Minimum Diurnal Average: 11.03 C at hour 5																										
Monthly Average: 16.313 C																										
Percentiles: P ₁ = 6.6 P ₁₀ = 10.1 Q ₁ = 12.6 Median = 15.5 Q ₃ = 20.0 P ₉₀ = 23.6 P ₉₉ = 27.2																										
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	16.1	16.4	15.6	15.7	15.0	13.9	13.8	14.7	17.4	19.2	21.2	22.3	23.3	24.2	24.9	25.1	25.1	21.2	19.3	19.3	17.9	16.9	16.6	15.5	18.78	25.13
2-Jun	14.5	13.7	13.2	13.3	12.8	12.8	13.0	12.9	13.4	14.9	16.0	17.9	19.7	20.7	14.3	13.3	14.9	14.5	14.2	14.1	12.3	11.0	10.2	9.7	14.05	20.75
3-Jun	9.1	8.3	7.6	7.0	6.8	8.4	10.2	12.9	15.1	17.1	20.0	21.9	22.1	22.4	23.8	23.8	23.8	24.2	23.5	20.2	17.0	14.9	13.2	13.9	16.14	24.17
4-Jun	14.4	13.6	12.5	10.5	9.6	11.9	12.5	13.3	15.2	17.1	18.7	19.7	20.1	20.8	21.2	21.7	21.9	20.3	18.7	17.5	15.5	14.9	14.6	12.7	16.21	21.94
5-Jun	12.3	12.3	11.6	11.6	11.2	11.8	12.8	13.7	15.6	17.2	18.5	19.6	20.5	21.2	21.8	22.2	22.3	22.1	21.8	19.5	14.9	11.7	9.6	8.3	16.00	22.29
6-Jun	7.5	7.1	6.6	6.1	5.8	7.4	11.5	15.0	18.7	21.4	22.6	23.0	23.6	24.0	24.5	24.8	24.5	23.9	22.8	22.1	20.5	17.1	15.5	15.4	17.15	24.80
7-Jun	14.5	13.9	12.4	11.4	10.8	12.6	15.9	17.2	18.6	20.2	21.8	23.1	24.3	25.6	26.4	26.7	26.9	26.2	24.4	22.6	20.6	18.8	18.8	18.5	19.68	26.87
8-Jun	18.5	17.6	16.5	16.0	14.2	15.2	17.0	18.0	19.4	21.7	24.0	25.8	25.9	25.8	25.8	25.6	25.3	25.3	25.1	24.1	23.3	20.9	16.1	15.4	20.93	25.93
9-Jun	14.6	14.2	14.3	14.1	14.0	13.9	14.4	15.5	16.1	15.5	14.1	14.7	13.4	11.9	11.3	11.2	10.6	9.9	9.5	9.3	9.2	9.1	8.6	8.2	12.41	16.08
10-Jun	7.8	8.0	8.4	9.0	10.7	10.6	10.5	10.7	10.7	11.6	13.6	16.1	16.6	17.8	18.3	18.8	19.2	19.4	19.1	16.4	13.8	12.1	10.9	10.5	13.36	19.41
11-Jun	11.2	11.4	11.2	12.4	12.3	11.2	10.5	10.5	9.8	10.2	11.3	11.9	13.0	13.5	14.6	15.0	15.7	15.3	15.0	14.5	13.7	AF	AF	AF	12.58	15.65
12-Jun	AF	AF	AF	AF	AF	AF	AF	AF	17.4	18.4	20.1	21.3	22.5	23.5	24.0	24.3	24.9	24.0	22.6	21.4	19.5	16.5	AF	AF	--	24.87
13-Jun	AF	AF	AF	AF	AF	AF	13.6	14.0	15.2	16.6	16.6	16.0	15.4	15.2	15.5	16.4	17.0	16.6	16.4	15.4	14.7	13.8	13.5	12.8	15.26	17.05
14-Jun	12.6	12.6	12.2	12.0	11.7	12.0	12.7	13.4	14.2	14.8	16.7	17.1	16.4	14.7	14.7	14.4	15.5	14.7	14.0	14.6	13.5	11.8	12.9	13.0	13.84	17.10
15-Jun	12.4	11.4	11.0	10.5	9.6	10.2	12.3	14.0	15.0	16.5	17.7	18.8	19.5	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	19.54
16-Jun	PF	PF	PF	PF	PF	PF	PF	PF	15.8	17.7	19.5	19.4	19.6	20.3	20.6	20.4	19.7	14.6	13.3	13.9	13.1	12.3	11.5	10.4	--	20.60
17-Jun	9.4	8.4	7.8	8.5	10.4	11.1	12.9	14.3	15.6	16.8	18.0	19.0	19.3	19.8	20.8	21.2	21.9	21.7	19.9	17.3	14.3	13.1	12.8	12.3	15.27	21.87
18-Jun	10.1	9.2	9.3	9.4	9.0	10.4	11.8	14.0	16.5	17.1	18.2	20.0	20.0	14.1	18.2	20.5	21.5	20.6	19.6	18.4	16.2	14.9	13.3	10.1	15.09	21.49
19-Jun	7.7	6.8	5.9	5.6	5.4	7.0	10.8	13.8	16.1	17.8	18.8	20.1	21.4	21.6	20.8	21.4	21.8	22.1	20.6	19.6	18.2	16.6	16.9	16.5	15.56	22.10
20-Jun	15.6	15.2	14.8	14.0	12.7	12.6	14.0	16.7	18.8	19.4	21.8	22.2	23.1	22.7	21.8	19.3	17.6	12.2	11.5	11.8	11.3	9.9	9.8	10.1	15.79	23.09
21-Jun	10.4	10.4	11.1	10.8	10.7	10.7	12.0	13.8	15.0	16.1	16.9	17.9	18.5	18.8	18.9	18.4	18.3	16.9	16.6	15.4	13.8	12.9	12.0	11.5	14.49	18.85
22-Jun	9.9	8.7	8.3	8.4	8.7	9.4	10.1	10.9	11.1	11.6	12.2	14.4	15.4	16.3	17.0	17.1	17.3	17.8	17.5	16.5	13.1	10.5	AF	AF	12.83	17.83
23-Jun	AF	AF	AF	AF	AF	AF	AF	AF	16.7	17.7	19.0	20.2	20.7	20.5	21.0	21.8	21.7	21.9	21.4	19.3	15.8	12.9	11.0	10.2	--	21.92
24-Jun	9.6	9.6	9.0	8.9	9.5	11.6	15.3	16.9	18.5	19.6	20.1	21.0	21.7	22.2	22.8	23.5	23.9	23.9	23.4	21.6	17.2	14.5	12.4	10.9	16.97	23.87
25-Jun	9.9	9.3	8.8	9.3	9.6	10.5	12.6	14.5	17.4	20.9	23.0	23.9	25.0	25.6	26.2	26.3	26.3	25.8	24.4	22.8	21.6	20.1	18.8	17.5	18.75	26.34
26-Jun	16.8	15.9	16.2	16.9	16.2	15.5	16.4	18.3	19.9	21.6	23.5	25.3	27.4	28.3	28.7	29.6	28.6	27.7	26.5	22.6	23.5	18.6	16.1	15.2	21.47	29.62
27-Jun	15.0	14.9	14.2	14.0	12.8	12.2	13.4	14.4	15.0	13.2	14.1	17.5	19.1	20.0	18.2	19.4	16.8	16.5	16.1	15.2	14.6	14.7	13.4	14.1	15.37	20.01
28-Jun	13.9	14.2	15.0	14.3	14.1	12.2	11.9	13.3	14.5	13.2	11.9	12.9	13.9	14.2	14.6	15.2	15.2	16.1	16.3	15.6	14.4	13.7	13.2	12.8	14.03	16.26
29-Jun	12.6	10.9	9.3	8.1	8.1	9.2	11.0	14.7	17.1	18.8	20.1	20.9	22.1	22.9	24.3	24.4	25.1	24.9	24.3	22.0	18.4	16.1	15.1	15.3	17.32	25.11
30-Jun	15.5	15.3	15.2	15.1	14.9	14.9	16.5	20.3	22.3	23.4	23.7	24.5	24.8	25.9	26.6	27.1	27.2	27.1	26.5	24.1	19.7	17.0	AF	AF	21.26	27.19
12.39 11.90 11.46 11.27 11.03 11.51 12.94 14.51 16.07 17.23 18.45 19.61 20.27 20.51 20.74 21.01 21.05 20.26 19.46 18.18 16.26 14.54 13.47 12.84																								Diurnal Average		
18.46 17.59 16.50 16.91 16.16 15.51 16.96 20.32 22.31 23.40 24.01 25.82 27.39 28.25 28.67 29.62 28.58 27.68 26.54 24.14 23.53 20.85 18.85 18.52																								Diurnal Maximum		
AF - Analyzer Failure PF - Power Failure																										



WCAS - Wagner2
Summary of Hourly Averages

Wind Speed (WS) - kph
June 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	2.6	6.9	3.0	3.2	5.9	2.5	0.3	4.0	4.9	4.2	3.9	2.2	3.0	3.8	4.5	5.0	3.0	5.7	0.8	2.0	2.8	1.5	7.3	0.4	1.88	7.31	
Dir	NW	WNW	NW	WNW	WNW	WNW	NW	WNW	WNW	NW	NW	SW	SSW	S	SSE	SE	SE	N	WSW	NNW	NNW	WNW	NW	WSW	WNW	NW	
2 Spd	2.2	7.8	7.3	5.6	0.4	3.4	6.0	5.2	2.7	3.3	3.2	5.3	3.6	6.7	2.0	0.8	1.5	3.5	2.4	2.7	2.0	1.0	0.8	1.1	2.88	7.82	
Dir	NW	WNW	WNW	W	NW	NNW	WNW	NW	NW	WNW	WNW	WNW	NNW	NW	NNW	NE	S	WNW	SSW	W	W	WNW	NNE	N	WNW	WNW	
3 Spd	1.3	0.7	1.1	1.0	0.8	0.9	1.9	2.6	1.8	5.4	9.7	12.6	12.2	11.7	11.7	7.8	5.4	2.6	0.8	0.5	0.5	0.7	0.6	6.9	2.76	12.64	
Dir	N	N	NW	NNW	NNW	ENE	SE	SE	SE	E	ESE	SE	SSE	SSE	SSE	SSE	SSE	E	E	NNW	N	NNW	NW	NW	SE	SE	
4 Spd	5.9	3.9	2.8	1.0	1.4	4.1	4.0	6.5	9.3	9.3	7.7	6.1	5.6	6.0	5.7	5.5	6.5	8.6	4.5	8.9	10.3	9.6	5.1	2.7	5.39	10.28	
Dir	NW	NW	WNW	WNW	WNW	WNW	NW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	NNW	NW	NW	WNW	WNW	WNW	WNW	WNW	NW	WNW	
5 Spd	1.6	1.0	1.8	1.5	2.9	5.7	7.2	6.7	7.0	7.9	9.0	8.2	8.9	10.5	9.9	8.8	8.0	6.2	3.5	2.2	0.9	1.0	0.7	0.5	4.89	10.49	
Dir	NNW	N	WNW	W	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	N	NNW	NNW	NW	NW	NW	NW	NW	
6 Spd	0.4	0.5	0.6	0.8	0.9	0.2	0.9	2.2	4.3	8.6	12.5	13.9	12.7	12.8	12.7	11.5	11.0	8.7	7.1	6.3	6.7	0.8	0.6	1.0	5.05	13.86	
Dir	NNW	NNW	NW	NW	NNW	NNW	SSE	ESE	E	SE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SE	ESE	ESE	ESE	SE	WNW	NNW	SE	SSE	
7 Spd	1.1	1.7	0.9	0.9	0.6	0.2	4.7	7.8	8.8	8.4	9.1	11.4	12.6	12.3	12.2	11.2	11.3	10.0	8.8	5.5	4.9	4.2	10.1	9.3	6.43	12.64	
Dir	ENE	E	NNW	N	N	W	ESE	ESE	SE	ESE	SE	SE	SE	SE	SSE	S	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	
8 Spd	8.9	8.5	4.4	4.3	1.3	6.3	9.8	9.8	11.9	15.2	16.6	17.2	17.1	14.3	16.4	13.4	10.9	11.7	13.8	11.5	12.1	2.0	0.6	1.3	9.68	17.20	
Dir	SE	ESE	ESE	ESE	ENE	ESE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	SSW	SE	SSW	ESE	SE	
9 Spd	1.0	0.8	4.4	0.5	1.1	2.2	1.5	2.2	3.1	4.6	4.5	7.0	10.0	9.3	8.7	7.2	8.2	10.2	10.0	5.9	7.2	7.6	6.8	5.0	5.19	10.16	
Dir	NNE	WNW	NW	ESE	W	W	W	WNW	W	W	W	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	W	W	WNW	W	W	WNW	WNW	
10 Spd	4.5	3.4	1.6	0.1	3.2	4.4	5.2	3.4	4.0	3.4	4.9	7.0	5.7	6.1	5.2	5.6	5.0	3.4	2.1	0.3	0.2	0.1	0.0	0.1	2.69	6.97	
Dir	W	W	SW	SSE	NNE	N	NNE	N	NNE	N	N	N	N	NNE	NNE	NE	NNE	NNE	N	NW	NNW	NNW	ESE	ENE	N	N	
11 Spd	0.5	0.1	0.4	5.2	3.4	2.4	4.0	4.1	3.5	3.5	3.8	3.9	3.0	1.2	1.6	3.6	2.0	2.7	2.2	1.2	1.3	0.3	0.3	0.0	2.06	5.18	
Dir	NNE	WNW	NNW	NW	NNW	N	NNW	NNW	NNE	N	NNW	NW	NNW	NW	NNW	NNE	NNW	NNW	NNE	NNE	N	N	N	NNE	NNW	WNW	
12 Spd	0.4	0.4	0.2	0.4	0.1	0.3	2.0	1.8	5.0	12.0	11.8	10.0	8.6	8.1	9.8	7.8	8.0	2.4	4.2	0.9	1.0	1.8	0.8	1.3	3.06	12.02	
Dir	NNW	NNW	W	N	N	ENE	E	E	S	S	S	S	S	S	SSE	S	SSE	S	NNW	N	NNW	NW	NNW	NW	S	S	
13 Spd	3.9	4.1	2.3	1.7	5.9	2.7	0.8	1.6	0.9	3.1	3.7	0.8	0.1	1.8	1.4	0.8	2.0	2.6	1.0	0.3	1.5	0.5	1.7	0.8	1.08	5.92	
Dir	NW	N	NE	NW	NW	NW	ENE	S	NNW	NNW	NNW	E	NNW	WNW	NW	WNW	S	S	SSW	S	SSW	NW	NW	NW	NW	NW	
14 Spd	0.3	0.4	0.5	1.1	0.8	1.1	0.3	1.4	2.0	4.1	5.6	6.6	6.3	4.0	5.1	4.7	6.8	3.9	2.8	4.2	2.1	2.5	4.8	3.7	2.89	6.76	
Dir	NNE	W	NW	NNW	NNW	W	N	SSE	WNW	NW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NW	WNW	WNW	WNW	NW	NW	NNW	
15 Spd	4.2	4.9	4.4	5.0	3.1	4.2	6.6	7.7	7.5	7.4	6.9	6.5	5.7	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	7.66	
Dir	WNW	WNW	WNW	W	W	W	WNW	NW	NW	NW	NW	NW	NW	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	NW	
16 Spd	PF	PF	PF	PF	PF	PF	PF	PF	PF	5.3	9.4	9.2	7.9	6.3	7.4	7.0	1.5	6.0	9.8	2.3	1.5	1.8	1.9	0.6	2.3	--	9.83
Dir	PF	PF	PF	PF	PF	PF	PF	PF	PF	NW	NNW	NNW	NNW	NNW	NW	NW	NNW	SSW	WNW	NNE	NNW	WNW	NW	NW	WNW	--	WNW
17 Spd	0.7	0.5	0.9	3.8	4.9	4.8	7.2	8.1	11.8	12.2	10.3	10.0	11.0	9.6	6.8	5.4	4.2	3.3	0.8	0.5	0.4	0.6	1.5	1.1	4.73	12.17	
Dir	NW	NNW	NW	W	WNW	W	WNW	WNW	NW	NW	WNW	NW	WNW	NW	NW	NW	N	NNW	E	NNW	NW	NNW	NNW	NNW	NW	NW	
18 Spd	0.5	0.6	0.5	0.3	0.4	1.6	0.8	1.6	5.8	6.0	3.7	3.7	4.6	7.3	3.1	1.0	0.1	2.4	0.8	2.2	2.3	2.5	2.9	2.2	0.27	7.29	
Dir	NNW	NNW	NNW	NW	WSW	S	W	WSW	S	SSW	WSW	SW	SW	N	E	SSE	NNW	SSE	ENE	NNE	NNE	NE	N	NNW	SW	N	
19 Spd	1.1	1.7	0.8	0.8	1.1	1.0	1.5	2.7	4.1	3.7	4.2	4.9	2.7	3.8	5.8	7.7	8.6	7.0	5.8	3.8	0.6	0.6	2.5	1.5	2.40	8.59	
Dir	NNW	NW	NNW	NNW	NNW	E	SE	ESE	ESE	SE	S	SE	ESE	ESE	ESE	ESE	ESE	ESE	SSE	SE	ESE	ENE	NW	NNE	NE	ESE	ESE
20 Spd	2.2	1.3	2.7	3.5	0.6	0.3	1.3	6.5	6.5	5.8	6.3	4.6	1.3	1.3	0.8	5.0	17.1	5.1	2.0	1.5	1.3	2.8	4.3	2.42	17.05		
Dir	ESE	E	ESE	ESE	E	N	W	W	NW	NW	NNW	NW	NW	WSW	ENE	ENE	WNW	NW	NW	W	W	W	WNW	WNW	NW	NW	
21 Spd	4.7	7.2	9.9	8.5	8.9	8.7	10.0	11.4	14.1	14.8	15.4	15.3	16.9	16.7	15.3	15.4	14.6	13.2	10.5	11.0	11.9	8.4	9.1	12.6	11.75	16.93	
Dir	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	NW	NW	NW	NW	NW	NW	WNW	NW	NW	
22 Spd	11.8	11.9	11.9	13.1	12.1	10.5	11.1	11.2	10.1	10.8	9.6	12.0	11.7	12.1	11.4	9.8	9.2	7.7	4.9	2.5	2.1	1.0	0.9	1.0	8.57	13.13	
Dir	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	N	NNW	NNW	NW	NNW	NW	WNW	



WCAS - Wagner2
Summary of Hourly Averages

Wind Speed (WS) - kph
June 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	1.0	0.7	0.5	1.0	0.9	0.1	1.8	5.1	7.3	7.5	8.1	7.4	8.6	8.0	6.7	4.5	5.4	4.0	3.8	2.0	1.3	0.8	1.6	0.4	3.41	8.57	
Dir	NNW	NNW	NNW	NNW	NNW	NNE	S	WNW	NW	NNW	NW	NNW	NNW	NNW	NNW	WNW	NNW	NNW	NNW	N	NNW	NNW	NW	WNW	NW	NNW	
24 Spd	0.5	0.6	1.1	0.9	1.0	1.0	0.4	4.6	6.1	5.1	5.9	6.2	6.8	4.4	5.7	4.8	2.6	2.9	1.7	1.0	0.7	0.8	0.6	0.6	2.59	6.82	
Dir	NNW	WNW	NNW	NNW	NE	ENE	NW	NW	NNW	NW	NW	NW	NNW	NNW	NW	NNW	N	N	NNE	N	NNW	NNW	NNW	NNW	NNW	NNW	
25 Spd	0.8	1.3	1.3	0.3	1.1	0.4	0.8	2.6	4.2	9.0	10.8	15.1	13.2	12.7	12.9	14.2	14.8	14.9	11.6	10.5	11.2	8.6	7.2	3.6	7.06	15.05	
Dir	NNW	NNW	NNW	NNW	N	NE	ESE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SE	SE	ESE	SE	SE	ESE	SE	SE	
26 Spd	6.8	5.7	9.4	10.0	9.8	8.5	7.6	7.7	7.1	6.9	7.7	5.8	3.4	4.2	4.2	4.4	5.5	0.6	2.6	1.9	3.9	15.9	6.3	6.7	3.47	15.93	
Dir	ESE	E	ESE	SE	ESE	ESE	ESE	SE	SSE	SE	ESE	ESE	ESE	ESE	SE	E	ESE	E	SE	NW	N	NW	NW	NW	ESE	NW	
27 Spd	9.3	9.6	7.9	12.0	8.2	7.1	10.4	12.3	17.0	15.8	10.2	15.1	13.3	12.9	9.8	5.7	8.9	9.1	13.7	13.5	6.3	5.0	1.0	5.1	9.76	17.02	
Dir	NW	NW	WNW	NW	WNW	WNW	WNW	WNW	NW	WNW	NW	NW	NW	NW	WNW	NNW	NW	NW	NW	WNW	WNW	WNW	WNW	W	NW	NW	
28 Spd	4.5	4.6	7.8	9.8	11.4	10.6	8.2	9.1	11.2	11.3	12.1	10.9	10.5	9.6	6.1	6.4	6.6	4.0	4.4	3.1	2.2	2.0	0.9	0.3	6.48	12.07	
Dir	W	W	WNW	WNW	WNW	W	W	WNW	WNW	WNW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NW	NNW	NNW	WNW	WNW	
29 Spd	1.0	1.7	1.4	1.0	1.1	0.5	0.4	2.8	3.2	6.0	4.5	5.7	3.9	3.0	4.6	5.1	2.4	3.1	1.4	0.6	0.1	0.3	0.1	0.1	1.97	6.01	
Dir	N	NNW	NW	NW	NW	W	W	W	WSW	WSW	W	W	WNW	WNW	WSW	WNW	SW	WSW	WSW	NNW	NNW	NNW	WNW	WNW	W	WSW	
30 Spd	0.1	0.3	0.2	0.1	0.3	0.5	0.4	3.5	5.1	6.2	6.6	7.6	8.7	6.0	5.7	5.6	5.5	4.4	2.7	1.3	1.0	0.4	1.2	0.2	2.69	8.66	
Dir	SSW	NNW	NNW	NNW	NNE	NNW	SSE	WSW	WNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	N	NNE	N	NNW	NNW	NNW	NNW	NNW	NNW	
Spd	1.40	1.84	1.84	1.97	2.17	1.77	1.62	2.22	2.82	2.68	2.24	1.99	2.19	1.88	0.91	0.46	0.34	1.87	0.99	1.08	0.85	1.70	1.34	1.49	Diurnal Average		
Dir	NW	NW	NW	WNW	NW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	W	NNW	NW	NW	N	NNW	NNW	NW	WNW	Diurnal Maximum		
Spd	11.81	11.87	11.92	13.13	12.14	10.63	11.09	12.30	17.02	15.80	16.57	17.20	17.12	16.70	16.42	15.36	14.79	17.05	13.76	13.48	12.06	15.93	10.06	12.58	Diurnal Maximum		
Dir	299.29	297.91	301.67	303.14	304.76	279.93	312.60	299.50	307.07	300.73	124.03	133.45	132.40	304.14	129.96	310.39	147.68	310.44	108.44	301.96	107.28	322.81	109.39	302.29	Diurnal Maximum		
Maximum Speed Value: 17.2 kph on Jun 8 12:00																			Minimum Speed Value: 0.0 kph on Jun 10 23:00					Hours in Service:		720	
Maximum Daily Speed Average: 11.75 kph on Jun 21																			Minimum Daily Speed Average: 0.27 kph on Jun 13					Hours of Data:		701	
Maximum Diurnal Speed Average: 2.82 kph at hour 9																			Minimum Diurnal Speed Average: 0.34 kph at hour 17					Hours of Missing Data:		19	
Monthly Average Velocity: 1.613 kph 309.65 deg																			Speed Percentiles: P ₁ = 0.1 P ₁₀ = 0.6 Q ₁ = 1.3 Median = 4.2 Q ₃ = 7.8 P ₉₀ = 11.4 P ₉₉ = 16.5					Percent Operational Time:		97.4	
All monthly, daily, and diurnal averages have been calculated using vector methods																											
PF - Power Failure																											
Frequency Distribution																											
	Speed Range (kph)																										
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																				
North	91	16	0	0	0	0	107																				
NorthEast	24	2	0	0	0	0	26																				
East	29	12	4	0	0	0	45																				
SouthEast	27	34	28	0	0	0	89																				
South	16	10	7	0	0	0	33																				
SouthWest	14	2	0	0	0	0	16																				
West	63	31	2	0	0	0	96																				
NorthWest	131	117	41	0	0	0	289																				
Total	395	224	82	0	0	0	701																				



WCAS - Wagner2
Summary of Hourly Averages

Relative Humidity (RH) - %
June 2017

Maximum Value: 101.98 % on Jun 29 07:00																						Maximum Daily Average: 89.13 % on Jun 9							Hours in Service: 720
Minimum Value: 19.8 % on Jun 17 18:00																						Minimum Daily Average: 39.12 % on Jun 21							Hours of Data: 701
Maximum Diurnal Average: 83.46 % at hour 5																						Minimum Diurnal Average: 41.71 % at hour 17							Hours of Missing Data: 19
Monthly Average: 62.047 %																						Percentiles: P ₁ = 22.5 P ₁₀ = 31.7 Q ₁ = 41.8 Median = 61.3 Q ₃ = 82.5 P ₉₀ = 93.9 P ₉₉ = 99.7							Hours of Calibration: 0
																													Percent Operational Time: 97.4
Day	Hourly Period Ending At																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Jun	76.9	74.9	83.4	77.6	75.9	88.2	94.5	87.0	71.8	61.2	51.9	50.9	44.6	38.6	36.4	36.8	35.4	51.8	63.3	66.2	71.1	76.8	68.0	73.6	64.87	94.47			
2-Jun	84.0	85.7	91.1	90.0	97.4	98.4	94.2	91.6	89.3	81.1	71.8	62.6	55.0	47.1	73.6	76.4	71.5	69.2	74.2	72.7	83.9	92.7	96.6	98.5	81.19	98.48			
3-Jun	98.5	98.9	99.6	99.8	100.2	100.4	85.1	70.4	58.3	56.4	47.2	32.0	31.3	32.1	28.2	30.1	33.2	36.8	44.6	57.1	70.2	81.1	85.8	74.3	64.64	100.39			
4-Jun	58.2	60.7	64.8	75.6	80.5	66.1	63.2	58.7	50.7	43.8	39.8	38.1	39.8	39.6	39.5	38.3	37.8	39.5	43.7	48.6	55.2	54.8	62.4	80.5	53.33	80.50			
5-Jun	83.3	80.6	83.5	86.4	86.9	75.9	71.0	67.0	58.1	50.6	43.6	36.9	32.4	27.4	22.5	20.5	20.0	20.6	22.5	33.2	53.1	67.0	72.9	81.7	54.08	86.93			
6-Jun	90.7	95.4	97.4	98.0	99.0	95.1	71.6	58.8	49.6	41.3	31.2	25.0	24.9	26.9	26.2	27.6	28.4	31.6	37.7	42.8	44.5	56.8	59.6	56.7	54.87	98.96			
7-Jun	59.2	62.5	68.1	72.1	76.3	71.4	58.7	53.0	48.8	46.0	42.3	40.5	38.5	36.9	34.1	31.0	30.4	30.7	35.8	44.1	52.2	56.6	52.2	50.3	49.65	76.29			
8-Jun	47.6	51.4	54.9	54.6	60.9	57.6	51.3	49.5	46.8	42.0	36.0	30.6	30.0	30.5	30.5	33.0	36.2	34.2	32.4	34.7	36.0	47.2	82.2	87.7	45.74	87.69			
9-Jun	93.5	96.9	94.0	94.6	97.8	97.3	94.5	85.7	79.9	82.5	91.2	77.6	81.7	87.8	91.7	90.6	85.8	86.1	87.5	88.8	88.2	87.0	88.3	90.0	89.13	97.82			
10-Jun	94.0	95.1	97.4	99.5	97.0	88.4	85.5	84.0	78.9	76.2	67.2	52.9	48.3	42.5	40.6	37.6	36.6	36.3	40.5	60.9	73.8	86.4	95.1	98.3	71.37	99.47			
11-Jun	96.4	93.2	93.8	75.9	71.1	79.1	85.5	86.5	88.8	85.5	72.1	68.3	64.6	63.0	59.8	58.6	56.8	59.5	62.5	67.3	72.5	82.3	86.3	88.1	75.73	96.36			
12-Jun	93.3	95.2	98.4	98.8	99.7	99.6	93.1	78.2	60.8	55.3	52.6	50.9	47.7	43.0	40.9	39.7	36.8	42.4	44.5	52.8	63.2	76.3	78.3	85.3	67.79	99.69			
13-Jun	75.4	70.6	68.8	70.6	77.8	82.6	74.8	73.2	66.9	56.9	55.3	71.6	78.8	81.2	74.4	68.1	63.8	69.0	70.6	81.5	80.9	87.1	83.4	86.0	73.71	87.14			
14-Jun	89.4	89.3	91.2	93.5	96.4	96.7	94.2	91.7	83.4	72.6	64.3	61.1	65.9	80.9	78.4	77.3	71.6	76.3	78.7	73.4	80.3	92.5	86.9	83.3	82.05	96.71			
15-Jun	84.9	83.9	83.5	85.9	88.3	85.0	72.5	64.4	60.1	54.4	48.6	42.8	38.2	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	88.28			
16-Jun	PF	PF	PF	PF	PF	PF	PF	PF	60.0	51.0	41.8	43.6	44.1	40.9	40.1	40.6	45.9	63.4	68.3	71.4	80.9	90.4	92.8	97.1	--	97.11			
17-Jun	98.4	98.1	97.3	84.8	63.7	61.8	50.3	45.7	40.7	34.7	31.1	27.5	24.0	23.2	22.1	21.5	19.9	19.8	30.0	48.6	61.5	67.1	65.8	63.6	50.05	98.38			
18-Jun	73.6	85.4	91.7	83.2	85.7	81.9	73.4	61.3	49.7	45.3	37.8	29.6	27.3	55.9	41.7	31.8	28.4	33.3	41.4	45.1	52.4	44.6	46.5	64.2	54.63	91.71			
19-Jun	77.6	84.4	87.7	93.6	97.0	95.3	71.5	61.3	47.1	40.2	35.0	30.8	27.2	29.0	33.7	32.7	34.6	34.1	39.7	44.2	53.0	60.0	55.8	57.2	55.12	96.98			
20-Jun	63.0	64.1	67.4	67.9	71.9	75.1	68.9	58.2	53.9	54.0	45.2	42.1	36.8	40.0	47.6	61.6	67.6	84.0	86.4	87.9	87.3	96.2	95.1	82.3	66.86	96.21			
21-Jun	67.0	61.1	53.1	49.7	45.9	45.9	43.4	38.9	34.7	31.3	28.4	26.6	24.3	23.5	24.0	24.7	24.6	27.2	29.3	34.9	41.1	47.6	54.0	57.6	39.12	67.03			
22-Jun	70.7	79.9	83.1	85.0	84.2	78.7	70.1	59.0	54.5	50.4	50.2	43.0	37.5	34.4	31.9	31.5	31.8	31.3	31.7	36.7	54.9	70.1	78.6	86.3	56.90	86.33			
23-Jun	92.9	96.3	97.7	98.5	99.6	94.6	67.7	57.4	50.9	48.6	44.5	34.9	33.5	34.8	30.3	29.9	30.3	28.4	29.5	41.2	55.9	72.1	78.3	83.7	59.65	99.55			
24-Jun	91.9	95.9	97.3	96.4	93.2	82.7	65.7	51.5	43.6	41.9	40.0	35.7	32.3	33.1	29.8	28.0	28.1	27.8	30.5	41.3	57.7	68.4	79.3	85.7	57.40	97.28			
25-Jun	91.3	95.6	96.7	98.3	98.6	93.4	79.9	75.4	62.1	50.9	41.6	40.4	37.2	32.4	31.4	34.6	33.1	33.2	37.5	45.4	48.3	52.0	56.3	62.4	59.50	98.60			
26-Jun	63.8	67.1	64.6	54.4	56.6	62.6	60.4	55.7	51.3	50.2	47.8	45.0	39.4	38.4	35.4	29.5	32.6	38.1	44.9	56.2	47.4	63.4	71.5	79.4	52.31	79.40			
27-Jun	77.2	66.3	65.4	63.6	63.5	61.9	53.6	49.9	48.2	57.7	55.4	40.0	37.1	35.1	42.4	42.3	52.8	54.9	52.9	54.4	54.6	53.4	63.6	58.3	54.36	77.23			
28-Jun	59.7	56.9	51.8	57.9	58.8	74.3	75.5	68.3	63.7	69.4	83.3	84.3	79.0	77.2	77.7	75.5	75.9	70.9	65.7	70.2	81.3	89.0	92.5	97.3	73.17	97.33			
29-Jun	98.1	99.0	99.6	100.1	100.9	101.6	102.0	88.9	70.6	60.4	53.9	50.5	45.2	40.1	35.4	32.9	32.5	32.9	38.6	53.3	69.2	80.3	88.2	92.3	69.44	101.98			
30-Jun	90.0	87.7	88.8	94.3	95.9	96.4	86.1	58.6	48.5	42.3	40.8	35.6	31.5	30.8	30.6	29.1	27.3	27.6	30.1	40.6	59.0	68.3	72.9	78.0	57.94	96.38			
80.70 81.80 83.18 82.78 83.46 82.34 74.42 66.54 59.06 54.47 49.73 45.04 42.61 42.97 42.44 41.79 41.71 44.51 48.11 55.02 63.10 71.29 75.50 78.61																						Diurnal Average							
98.50 99.00 99.62 100.09 100.93 101.60 101.98 91.71 89.29 85.55 91.21 84.32 81.71 87.85 91.67 90.64 85.82 86.10 87.50 88.78 88.23 96.21 96.58 98.48																						Diurnal Maximum							

PF - Power Failure



WCAS - Wagner2
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
June 2017

Maximum Value: 10.52 kph on Jun 20 17:00		Maximum Daily Average: 6.24 kph on Jun 21		Hours in Service: 720																																													
Minimum Value: 0.2 kph on Jun 10 23:00		Minimum Daily Average: 1.80 kph on Jun 19		Hours of Data: 701																																													
Maximum Diurnal Average: 4.36 kph at hour 13		Minimum Diurnal Average: 1.87 kph at hour 24		Hours of Missing Data: 19																																													
Monthly Average: 2.959 kph		Percentiles: P ₁ = 0.4 P ₁₀ = 0.9 Q ₁ = 1.4 Median = 2.7 Q ₃ = 4.1 P ₉₀ = 5.4 P ₉₉ = 8.1		Hours of Calibration: 0																																													
				Percent Operational Time: 97.4																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jun	2.5	3.4	2.7	2.5	3.5	1.9	1.3	3.2	3.0	1.9	2.7	2.8	2.8	2.8	2.3	2.3	2.3	3.0	2.0	1.6	2.3	1.8	5.1	1.8	2.56	5.09																							
2-Jun	4.1	4.8	3.9	4.7	1.4	3.0	3.3	3.3	2.2	2.5	2.3	3.3	3.2	4.1	4.5	2.3	1.5	4.5	1.7	2.0	1.5	1.2	0.8	1.1	2.79	4.78																							
3-Jun	1.3	1.0	1.2	1.0	0.9	1.1	1.0	1.3	1.2	2.2	4.0	4.5	4.2	3.9	4.4	3.4	2.2	1.5	1.1	0.6	0.7	1.3	1.9	5.3	2.14	5.27																							
4-Jun	4.3	3.1	2.1	1.2	1.2	2.7	2.5	4.1	4.9	4.8	4.2	3.8	3.7	3.9	3.6	3.3	4.4	5.0	3.0	4.3	5.2	4.8	3.2	1.7	3.54	5.19																							
5-Jun	2.7	1.6	1.6	1.5	1.9	2.8	3.5	3.9	4.4	4.3	4.8	4.8	4.8	5.6	5.9	4.6	4.3	3.9	2.7	1.1	0.9	0.8	0.7	0.7	3.08	5.88																							
6-Jun	0.5	0.6	0.8	0.9	0.7	0.7	0.9	1.4	1.4	4.0	4.2	4.3	4.7	4.9	4.2	4.3	4.2	2.4	1.8	1.9	2.3	1.3	1.2	1.4	2.29	4.93																							
7-Jun	1.5	1.7	1.0	1.1	0.9	0.5	2.4	2.3	2.4	2.5	3.3	3.5	4.3	4.5	4.2	4.2	3.8	2.8	2.1	2.2	2.0	2.1	2.2	2.5	2.50	4.46																							
8-Jun	2.3	2.2	2.5	3.2	1.7	3.8	2.8	2.9	4.1	3.8	4.5	5.4	5.3	4.3	5.2	3.5	2.6	3.1	4.1	3.5	3.4	4.2	1.7	1.7	3.42	5.43																							
9-Jun	1.2	1.3	2.5	1.3	1.3	2.0	1.4	1.5	2.1	2.9	2.9	4.4	5.7	5.1	4.2	4.9	5.2	5.8	5.5	3.5	4.0	4.3	4.0	3.4	3.35	5.83																							
10-Jun	2.9	2.2	1.7	0.8	2.7	3.2	3.9	3.3	3.1	2.9	4.2	4.8	4.2	4.5	4.1	4.1	3.6	2.5	1.7	0.6	0.5	0.4	0.2	0.4	2.60	4.76																							
11-Jun	1.1	0.6	1.2	4.3	2.8	2.7	2.7	2.7	2.6	2.3	2.4	2.4	2.1	1.9	1.9	2.5	1.9	2.2	1.4	0.9	1.2	0.8	0.6	0.3	1.90	4.32																							
12-Jun	0.6	0.6	0.6	0.7	0.4	0.6	1.4	1.5	4.5	4.2	4.7	3.9	3.6	3.8	3.9	3.8	3.9	3.4	2.9	1.1	1.4	2.1	1.4	1.2	2.34	4.68																							
13-Jun	3.1	3.3	2.6	2.5	3.3	2.8	1.6	1.6	1.6	2.2	2.9	1.4	1.5	1.4	1.6	1.6	1.2	1.5	1.5	0.9	1.6	1.2	2.3	1.2	1.93	3.28																							
14-Jun	0.9	0.9	1.4	1.3	1.4	1.7	1.0	1.5	2.3	2.8	3.3	3.7	4.0	3.0	3.3	3.1	3.9	2.9	2.7	2.9	1.6	1.5	3.0	2.7	2.37	4.04																							
15-Jun	2.2	2.6	2.5	2.4	1.8	2.3	3.4	4.1	3.8	3.8	3.8	3.7	4.0	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	3.12	4.11																							
16-Jun	PF	PF	PF	PF	PF	PF	PF	PF	3.8	5.2	5.1	4.7	4.1	4.1	3.8	3.0	3.1	7.1	2.9	2.2	1.7	1.5	0.9	0.8	3.38	7.10																							
17-Jun	1.0	0.7	1.0	1.8	2.2	2.1	3.7	4.2	6.1	6.5	5.5	5.3	5.7	5.3	5.0	4.4	3.0	2.8	1.3	0.8	0.6	1.4	1.3	1.5	3.04	6.53																							
18-Jun	0.8	0.8	0.8	0.7	1.2	1.5	1.3	1.5	2.5	3.2	2.6	3.1	6.2	4.9	2.7	1.8	2.5	2.4	0.9	1.7	3.2	2.4	2.0	1.7	2.18	6.16																							
19-Jun	1.1	1.2	0.7	0.8	0.9	1.3	1.1	1.0	2.5	2.3	2.5	2.8	2.6	3.0	2.0	2.8	2.7	3.0	2.2	2.1	0.9	1.1	1.2	1.3	1.80	3.02																							
20-Jun	1.8	1.3	1.8	2.8	1.3	0.8	0.9	2.7	4.3	3.9	3.6	3.6	3.3	2.3	1.3	1.4	10.5	8.9	5.0	1.8	1.5	1.3	1.4	2.7	2.94	10.52																							
21-Jun	2.4	3.4	5.4	4.4	5.2	4.6	4.9	5.9	6.9	7.4	7.5	7.2	8.5	8.1	7.6	7.8	7.7	7.9	6.9	6.7	6.6	4.8	5.2	6.6	6.24	8.45																							
22-Jun	6.4	5.8	6.2	6.5	6.0	5.2	6.5	7.2	6.2	5.8	5.6	6.2	6.6	6.8	6.2	6.2	5.3	5.4	3.8	2.8	1.1	0.7	0.8	0.8	5.01	7.19																							
23-Jun	0.8	0.7	0.7	0.8	1.7	1.6	1.9	3.2	4.3	4.1	4.6	4.8	5.0	4.8	4.3	3.5	3.7	2.6	2.6	1.4	1.1	1.1	1.8	1.3	2.60	5.00																							
24-Jun	0.9	1.0	1.1	0.9	1.7	1.4	1.9	3.2	3.5	3.2	3.3	3.7	4.3	3.8	3.8	3.6	2.9	2.8	1.8	0.9	0.7	0.7	1.0	1.0	2.20	4.33																							
25-Jun	0.8	0.9	0.8	0.7	0.7	0.8	1.2	1.5	2.9	2.8	3.6	4.0	4.4	4.3	4.9	5.2	5.0	4.8	3.8	2.6	2.5	2.4	2.4	1.6	2.70	5.22																							
26-Jun	2.1	2.1	2.4	2.1	2.0	1.3	1.8	2.1	2.2	2.5	2.2	2.7	2.1	2.2	2.7	3.0	4.0	1.2	2.2	3.6	3.7	9.7	4.7	4.4	2.88	9.67																							
27-Jun	5.3	5.5	4.7	7.0	5.2	3.7	5.8	7.0	8.2	9.6	5.3	7.6	6.6	6.5	6.7	3.9	6.4	5.3	7.2	7.4	4.1	4.0	1.3	3.3	5.73	9.56																							
28-Jun	3.3	3.3	5.8	6.7	6.4	6.0	4.2	5.7	6.3	6.4	5.8	5.9	5.8	5.8	4.4	4.2	3.8	2.9	2.9	2.4	2.0	1.7	1.2	0.7	4.31	6.67																							
29-Jun	0.9	1.1	1.0	1.1	0.8	0.9	1.0	2.5	2.5	3.4	3.2	3.5	3.2	2.8	3.6	3.1	2.5	2.7	1.8	0.7	0.4	0.6	0.4	0.4	1.84	3.55																							
30-Jun	1.1	1.0	0.7	0.5	0.8	0.9	0.9	2.9	2.8	3.6	3.9	4.4	4.3	3.8	3.8	3.9	4.1	3.2	2.1	1.2	0.8	0.6	1.1	0.5	2.20	4.38																							
																								2.06	2.03	2.12	2.28	2.13	2.21	2.43	3.08	3.63	3.91	3.95	4.20	4.36	4.21	4.00	3.66	3.88	3.70	2.81	2.25	2.05	2.13	1.90	1.87	Diurnal Average	
																								6.37	5.84	6.24	6.97	6.43	5.98	6.48	7.19	8.16	9.56	7.49	7.55	8.45	8.09	7.64	7.79	10.52	8.92	7.16	7.38	6.59	9.67	5.20	6.63	Diurnal Maximum	
PF - Power Failure																																																	



WCAS - Wagner2
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
June 2017

Maximum Value: 101.16 deg on Jun 23 06:00		Maximum Daily Average: 65.30 deg on Jun 13		Hours in Service: 720																																													
Minimum Value: 9.3 deg on Jun 7 23:00		Minimum Daily Average: 28.02 deg on Jun 8		Hours of Data: 701																																													
Maximum Diurnal Average: 61.02 deg at hour 22		Minimum Diurnal Average: 32.37 deg at hour 10		Hours of Missing Data: 19																																													
Monthly Average: 48.001 deg		Percentiles: P ₁ = 13.1 P ₁₀ = 22.8 Q ₁ = 30.6 Median = 41.0 Q ₃ = 65.5 P ₉₀ = 83.1 P ₉₉ = 96.8		Hours of Calibration: 0																																													
				Percent Operational Time: 97.4																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jun	72.0	30.5	47.5	48.6	37.4	40.3	87.8	59.4	38.0	36.7	52.8	72.8	73.4	63.8	36.2	30.4	51.1	33.4	75.5	63.6	64.1	65.2	42.8	97.7	55.04	97.67																							
2-Jun	78.5	38.4	28.6	58.1	92.4	45.0	31.3	36.9	46.0	37.4	42.0	38.2	64.4	39.2	78.8	92.9	58.6	76.4	39.0	35.0	36.8	67.7	61.0	53.4	53.16	92.86																							
3-Jun	67.4	85.5	59.4	75.1	78.8	64.8	35.1	29.1	40.9	14.9	18.4	23.7	22.6	20.4	21.9	25.9	22.8	28.3	62.6	81.6	79.2	86.6	82.9	40.2	48.68	86.62																							
4-Jun	44.2	53.1	42.2	61.9	47.6	36.3	33.0	33.9	30.6	30.1	32.2	40.4	42.5	41.3	41.9	43.8	42.0	32.6	35.0	26.1	27.3	27.8	43.2	35.3	38.52	61.93																							
5-Jun	68.8	79.3	59.9	55.1	50.0	27.0	26.0	28.9	36.0	32.5	31.5	37.5	33.9	30.8	34.2	32.5	34.1	36.3	43.5	28.7	76.3	68.0	71.1	81.1	45.95	81.06																							
6-Jun	87.1	72.8	85.4	71.1	54.8	93.3	51.0	47.2	15.1	27.7	21.3	20.7	24.6	25.8	24.4	25.0	23.8	16.0	14.1	13.3	13.1	78.0	84.1	84.0	44.75	93.34																							
7-Jun	75.5	59.5	69.5	82.6	79.9	54.7	18.4	18.4	21.5	23.2	24.2	22.7	27.6	27.0	23.2	21.9	20.8	19.8	13.1	15.9	13.8	17.1	9.3	15.3	32.29	82.55																							
8-Jun	15.3	13.4	30.1	36.9	66.7	25.3	17.4	17.6	17.3	17.3	16.6	21.8	18.6	19.2	17.5	14.9	16.5	16.4	14.3	13.4	13.2	83.8	90.5	58.3	28.02	90.51																							
9-Jun	75.3	75.9	35.1	86.7	69.1	47.0	53.4	40.2	39.2	28.0	35.4	31.9	30.9	32.7	30.7	33.3	35.9	32.2	32.2	37.5	31.8	31.8	30.4	39.0	42.31	86.74																							
10-Jun	41.5	42.9	50.6	82.6	44.8	40.8	43.4	57.9	43.0	47.8	49.2	47.0	49.6	53.2	52.4	48.8	44.2	44.4	51.6	83.6	89.0	87.1	64.6	65.1	55.21	89.00																							
11-Jun	92.6	93.4	96.8	70.1	51.2	65.6	33.3	37.3	43.1	39.4	34.1	36.8	44.5	79.6	74.7	48.8	77.3	51.4	38.4	47.8	69.9	81.8	69.3	72.3	60.40	96.80																							
12-Jun	94.5	91.6	74.2	78.2	79.1	78.5	55.7	60.7	39.1	20.0	22.8	20.8	24.4	23.3	26.8	29.1	28.7	83.6	35.0	76.5	86.0	71.9	78.5	73.6	56.36	94.47																							
13-Jun	45.8	45.9	58.5	74.5	35.3	73.5	81.5	79.4	83.7	51.5	46.9	90.2	96.6	47.0	64.7	87.2	38.5	33.6	58.1	77.7	62.9	80.7	78.7	75.2	65.30	96.60																							
14-Jun	80.8	89.0	94.9	70.9	79.4	78.3	93.6	71.6	77.2	33.7	31.9	34.7	34.3	41.0	37.5	37.3	31.4	39.6	53.0	33.4	44.4	44.0	31.6	33.4	53.20	94.89																							
15-Jun	27.1	26.8	26.4	27.6	24.8	28.4	29.0	29.5	30.8	33.1	34.6	40.3	41.3	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	30.76	41.34																							
16-Jun	PF	PF	PF	PF	PF	PF	PF	PF	41.2	33.0	34.2	38.3	40.3	34.7	33.2	82.6	40.2	32.1	76.9	74.9	60.0	54.8	79.0	27.0	48.89	82.57																							
17-Jun	66.1	84.3	49.0	21.6	22.9	25.9	29.6	30.5	30.3	29.4	30.9	31.5	32.1	34.7	43.9	52.4	44.9	60.8	80.1	90.5	84.4	88.5	67.3	83.4	50.62	90.53																							
18-Jun	90.3	90.2	82.1	90.2	92.2	53.2	77.4	54.8	31.7	38.1	44.0	57.0	58.3	45.4	62.3	89.9	99.7	58.1	63.1	58.1	58.2	52.5	39.3	61.8	64.50	99.72																							
19-Jun	55.8	50.4	61.9	68.1	50.6	77.8	53.1	24.1	33.4	35.6	41.5	49.3	59.4	45.0	24.8	21.0	20.8	25.7	16.4	29.9	68.3	89.1	32.6	57.9	45.52	89.05																							
20-Jun	51.5	53.2	40.5	40.4	83.1	94.7	79.5	74.1	35.3	37.0	41.6	35.2	51.3	75.4	60.6	83.1	96.9	31.0	55.4	65.0	53.6	44.2	31.7	27.9	55.91	96.86																							
21-Jun	25.9	28.2	29.0	29.5	30.5	29.4	27.3	28.6	28.4	28.1	27.7	28.5	27.1	26.3	29.4	29.8	29.9	33.8	35.7	35.5	29.2	35.2	32.9	27.4	29.72	35.70																							
22-Jun	28.1	27.3	28.4	27.0	27.4	29.6	34.2	37.2	38.1	33.5	36.2	32.8	34.1	33.2	33.0	35.2	32.5	42.6	45.1	49.1	33.7	50.1	67.7	56.6	37.19	67.69																							
23-Jun	77.4	78.1	85.1	57.1	93.4	101.2	73.2	34.3	34.7	35.0	37.2	44.0	35.9	34.9	40.7	51.3	49.3	40.4	42.5	30.6	79.0	84.4	65.6	94.4	58.31	101.16																							
24-Jun	79.7	83.1	69.1	78.2	91.6	73.9	98.3	36.7	36.7	41.6	44.5	38.1	39.3	59.1	50.0	49.0	68.8	72.7	58.9	43.8	72.9	77.3	81.6	90.7	63.98	98.31																							
25-Jun	61.0	47.6	40.3	91.0	21.4	86.5	62.9	32.8	39.8	23.1	23.3	18.7	25.0	22.5	25.2	25.3	22.4	20.2	17.7	14.7	12.4	16.1	19.8	23.8	33.06	90.99																							
26-Jun	12.9	17.9	12.5	14.7	13.6	9.6	15.3	23.2	20.6	30.7	16.4	21.6	46.8	40.9	38.5	45.5	41.0	76.4	46.4	78.5	62.7	40.8	46.8	33.7	33.63	78.51																							
27-Jun	33.9	34.8	35.0	27.5	36.2	27.7	31.2	30.1	26.7	29.7	29.7	29.6	31.5	32.6	42.9	44.2	38.6	32.7	28.2	31.4	31.2	29.9	74.6	33.4	34.31	74.63																							
28-Jun	37.2	31.8	34.6	30.5	31.8	32.8	30.2	35.8	30.2	31.0	28.1	29.8	32.5	38.1	45.3	41.0	36.9	40.3	32.5	29.4	60.8	51.1	82.5	94.8	40.37	94.79																							
29-Jun	81.5	56.2	60.1	82.1	67.2	79.6	79.6	59.8	54.2	37.6	42.3	37.7	59.4	64.8	53.3	39.0	61.0	50.8	70.9	84.5	86.8	89.6	91.7	55.2	64.37	91.68																							
30-Jun	97.5	89.7	96.2	83.7	93.8	94.3	57.1	57.5	32.8	34.3	34.6	34.1	33.5	38.9	45.0	44.1	48.4	44.1	45.8	61.6	62.5	94.1	72.1	94.5	62.09	97.54																							
																								60.87	57.62	54.59	59.36	56.79	55.69	49.62	41.64	37.18	32.37	33.54	36.85	41.19	40.37	41.13	45.00	43.33	41.57	44.18	48.67	53.90	61.02	59.42	58.15	Diurnal Average	
																								97.54	93.43	96.80	90.99	93.77	101.16	98.31	79.39	83.65	51.49	52.78	90.23	96.60	79.61	78.80	92.86	99.72	83.56	80.12	90.53	89.00	94.14	91.68	97.67	Diurnal Maximum	
PF - Power Failure																																																	

WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT**

**END OF REPORT
JUNE 2017**